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THE EXCAVATING ENGINEER PUBLISHING COMPANY

BRADLEE VAN BRUNT, Manager and Editor

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Sewer and Ditch Construction.
Basement and Miscellaneous Excavation.
Irrigation, Drainage and Miscellaneous Canal Excavation.
Dredge Work.
Electric Excavating Machinery.
Field Notes.
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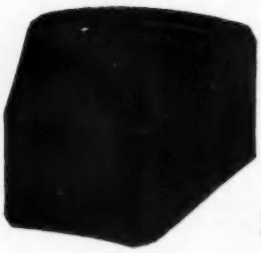

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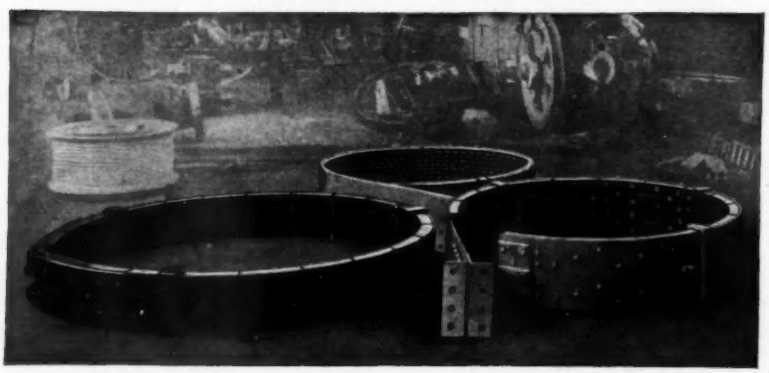

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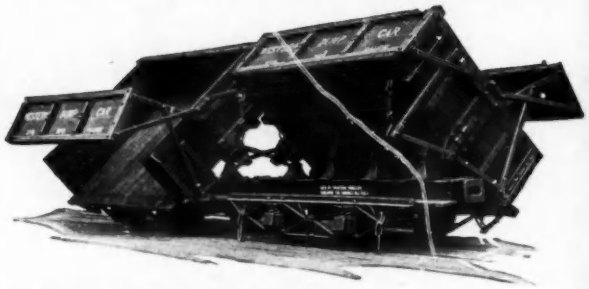

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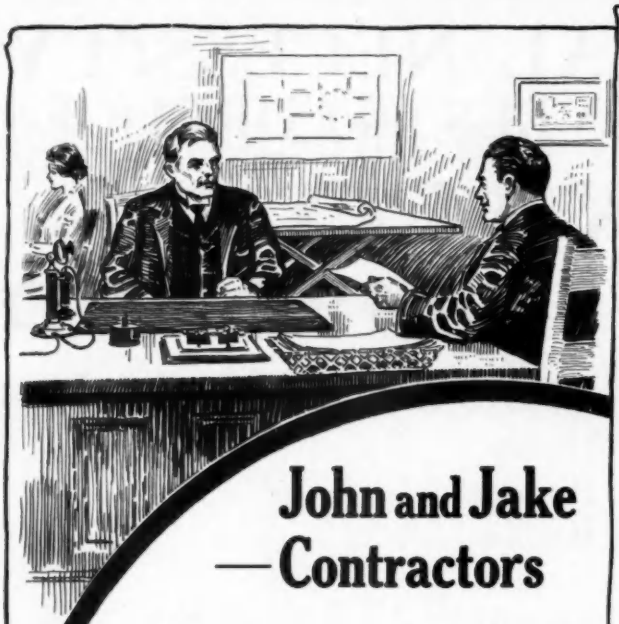

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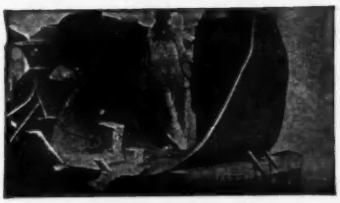

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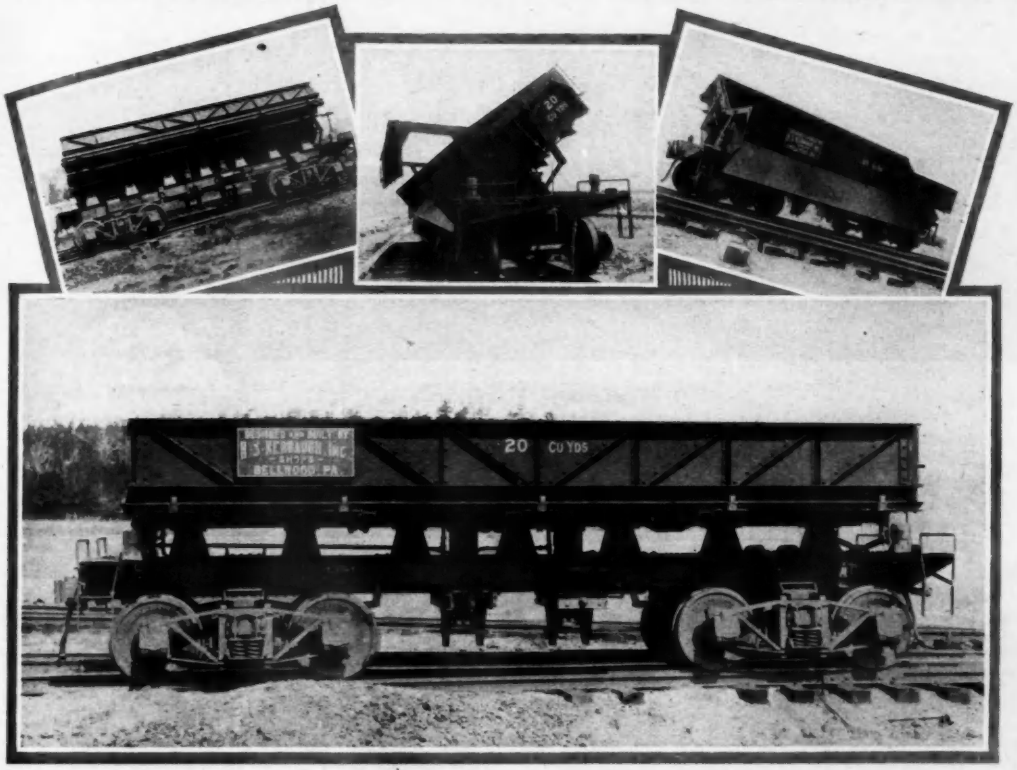

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225-B Bucyrus shovel making a turn after having gone through a 32-foot cut. This shovel has averaged 4500 cubic yards per day of 9 hours.

The tipple, elevated water tank and powerhouse. A loaded car on the way up the incline. Note drainage ditch to right.

The Excavating Engineer

Vol. 13 FEBRUARY, 1917 No. 5

The J. R. Crowe Coal Company's Stripping Plant at Scammon, Kansas

By W. S. Russell

A description of one of the best up-to-date coal stripping plants in the Kansas district, and one of the largest coal stripping steam shovels in use. Handling a 32-foot cut. Digging 4500 cubic yards in 9 hours.

THE J. R. Crowe Coal & Mining Company, well known coal operators whose general office is in Kansas City, opened up a strip coal field of over 80 acres a mile south of Scammon, Kansas, during the year 1912, with a model-250 Marion steam shovel of the revolving type. This proved to be inadequate to handle the material to advantage and was finally sold.

The field is well adapted for stripping, being level and located along the Frisco Railroad. The overburden runs from 18 feet to 32 feet in depth, consisting of sandy clay, gray shale and hard blue shale in occasional streaks. The coal vein is from 3'-0" to 3'-6" in thickness and is of the best quality. There are few horsebacks to contend with in getting out the coal.

The Plant

The plant necessary to operate this field is complete and up-to-date in every respect, consisting of steam shovel, locomotives, tram cars, tram tracks, engines, pumps for freeing the pit, tipple with shaker screens, engine house, elevated water tank, artesian well, water pipes, blacksmith and repair shop, store house, dinkey engine house, etc., all of which are of the best in every respect.

The plant was designed by R. A. Gray, general manager for the J. R. Crowe Company at Weir City, who has had a long and successful experience in coal mining. W. C. Shank is mining engineer and assistant manager.

The Steam Shovel—What It Can Do

A Bucyrus 225-B revolving steam shovel of the largest type weighing over 300 tons was installed in July 1915 and started to work. This shovel is of a different design from any other in use and has many points of advantage. It has a 75-foot boom and a 6-yard dipper holding nearly 8 cubic yards of material heaped up. It has a working speed of two trips per minute and has handled an average of 4500 cubic yards per day of 9 hours, including usual delays, surpassing all records for stripping coal made by any steam shovel. The shovel runs smoothly without any perceptible trembling or vibration owing to its massive construction. It is handled by two men, the engineer and cranesman, as easily as an ordinary railroad steam shovel. Owing to its extra height it will handle deeper stripping and make a box cut in deeper over-burden than any other shovel built. This shovel will dump over 100 feet out and will uncover from 64 feet to 115 feet in width or coal according to the depth of the stripping.

The dipper will dump the material 62 feet high above the surface of the coal on which the shovel is placed and will handle 40 feet in depth of overburden.

Description of Shovel

The upper body revolves on a turntable 30 feet in diameter. The turntable base is 31 feet square, of massive construction built entirely of steel. It is mounted on 4 swivel trucks each having 4 double-flanged wheels 24 inches in diameter for a 36-inch gauge of track. The rails on which the shovel operates weigh 100 pounds to the yard, are fitted with bridle bars in sections about 7 feet 6 inches long and form a double track.

The shovel is self-propelling by chain gearing to all 4 trucks. The truck base is fitted with a heavy steel equalizer beam across one end, having a center plate bearing in the middle and jack screws at both ends which rest upon the trucks. By its self-adjusting movement this allows the truck to follow any unevenness of the coal surface when the shovel is moved up. The jack screws are then set tight and all four corners of the base are evenly supported.

One of the new features of this shovel is the single part hoisting rope which lifts the dipper and leads straight from the main drum to an 8-foot diameter sheave on point of boom, over which it passes to the

dipper, thus doing away with the 3-part rope and dipper sheave used on all other steam shovels.

This plan lessens the wear on the rope and does away with overheating the check belt on the hoisting drum when lowering the dipper.

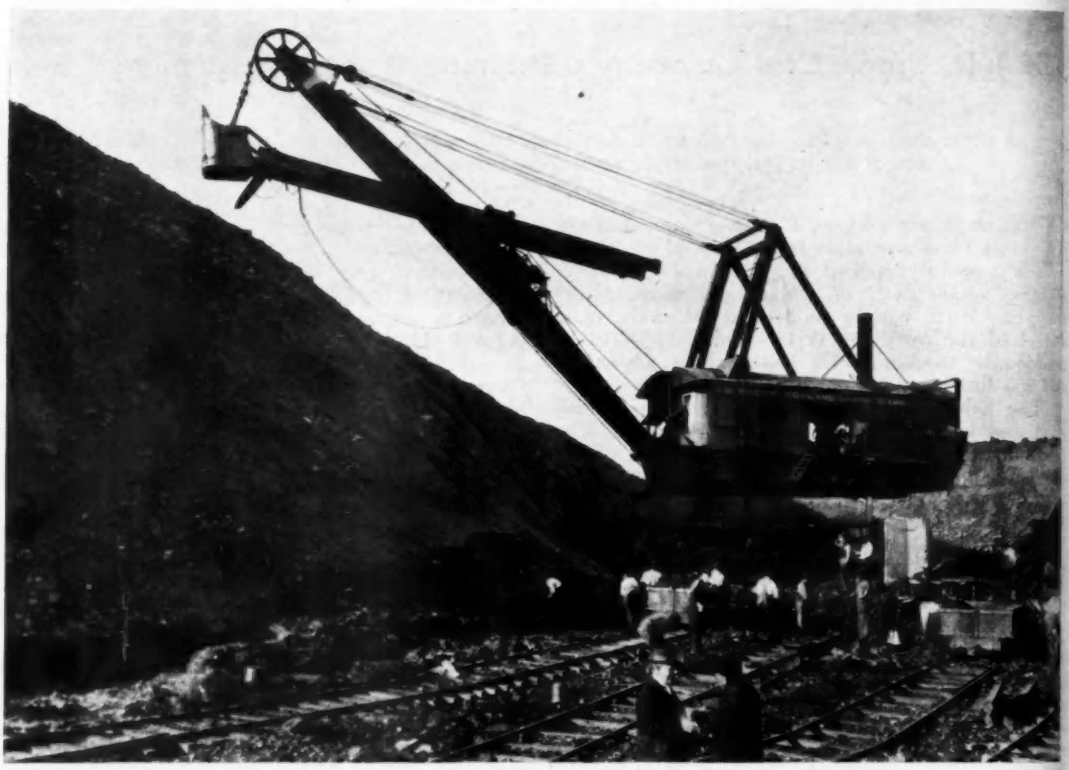
Another improved feature is the placing of the main hoisting engines and machinery as well as the swinging engines on a heavy steel plate girder frame 4 feet in depth. This girder frame is riveted solidly in the shops and shipped intact to the field, thus doing away with the overhead truss frame common to all other coal stripping shovels. This construction is impregnable and can never give way under any conditions.

The boiler, engines, and machinery are of the latest design and construction. All gearing is of cast steel with machine cut teeth. The shovel as a whole is exceedingly strong and durable and repairs are very light.

The Operation

It may be well to explain that in coal stripping with the present type of revolving steam shovels, the material is handled but once, being dug from the bank and deposited on one side in the excavated space from which the coal has previously been removed.

In opening up a new field the shovel digs its way down to the coal on a 10 per cent grade making the "box pit" as it is called, which may be as deep as 30 feet by 65 feet in width. The shovel is operated on the coal surface and is moved up about 7 feet at a time as the digging progresses.



Loading coal behind the 225-B which has just dumped a load. The tram cars are loaded by hand and hauled to the incline by a locomotive.

The coal is taken out behind the shovel by hand labor and loaded into the tram cars, as shown in our illustration, which also shows the steam shovel in operation just after having dumped its load.

The tram tracks are placed on the fire clay which lies underneath the coal in bottom of the pit, having switches to permit shifting the tram cars as shown. There are 3 or 4 of these tracks up to the breast of the coal so that several cars may be loaded at once.

The Pit Equipment

The tram tracks extend from the tipple directly into the pit as shown in our illustration. There is

over a mile of track of 42-inch gauge, the rails weighing 25 pounds to the yard, having the necessary switches and turn-outs. There are 50 tram cars of 2½ tons capacity each which were furnished by the United Iron Works of Pittsburg, Kansas. The cars are hauled from the steam shovel to the tipple incline by a 10-ton Davenport locomotive having 8″ x 9″ cylinders and a capacity to haul 20 loaded cars in a train.

There are four centrifugal pumps having 6-inch suction and 4-inch discharge. Three of them are electrically driven by an alternating current of 220 volts, furnished by the Empire District Electric Company.

The loaded tram cars are hauled from the foot of the incline to the tipple platform by a wire rope cable, where they dump automatically upon the shaker screen and are returned to place on a separate track.

The Tipple and Power House

The tipple powerhouse and elevated water tank are shown in our illustration. The tipple is 54 feet in height and is built in a most substantial manner having heavy timbers covered by corrugated galvanized iron.

A picking table is provided extending along the screens where the refuse material found in the coal can be thrown out before being deposited into the railroad cars.

The tipple is 31 feet high from the ground to the dumping platform and is fitted with shaker screens of the ordinary perforated steel-plate type. These are operated by the main engine in the power house. They separate the coal into three grades, lump, nut, and slack.

The power house is adjacent to the tipple and is very convenient. The frame is of wood covered with galvanized iron. It contains a 68-inch tubular boiler of 160 horse-power set in a brick arch. The engine is an 8″x 8″ double cylinder, mine hoist friction operated and geared to a 36-inch hoisting drum. The cable leads to the tipple incline and pulls the tram cars up at the rate of a car a minute. Within the power house is a well 800 feet deep for supplying water to the steam shovel and other machinery on the plant. The water is lifted by a 7 x 30 inch Cook, direct acting deep well pump made by the Cook Well Company of St. Louis, Missouri. This pump is operated by the main engine in power house.

The blacksmith and repair shop is conveniently located and well built being covered with corrugated galvanized iron. It contains the blacksmith forge and tools, a drill press, etc.

The store house is roomy and well stocked with necessary supplies.

Captain Dan Miller, Superintendent

The successful operation of this plant is mainly due to close attention and competent management given it by Captain Dan Miller, superintendent, who took charge a year ago and has now brought it to a good paying basis. Captain Miller has the reputation of being the best steam shovel coal stripper in the district and his operations at Scammon for 4 years have demonstrated it. He understands deep cutting thoroughly. He succeeded in putting the 225-B. Bucyrus shovel through a cut 32 feet in depth, a feat previously considered impossible by many authorities. One illustration shows the shovel making a turn after this feat was accomplished. Captain Miller is very particular in having his tram tracks in good shape in order to make good running time and in not having the cars jump the track. They are, therefore, well ballasted, high and dry and free from kinks in the rails. He provides against water in his pit by digging a deep ditch leading to a pump where the water can be pumped out at all times.

Captain Miller provides against delays caused by breakage on the steam shovel or other machinery or the giving out of worn parts, by having an extra piece on hand anticipated by forethought. The result is his shovel is always running and he is always on the job giving close personal attention to the work.

For Sale or Trade

My husband, a traveling man, now in Cuba, for another. One whose business or duties does not keep him out nights. A dude or sissy need not apply, but one with some pep, who does not use any kind of liquor, not even "near beer." I won't object to him smoking a pipe or good cigars but object to him chewin', if he wears long whiskers. Yet they are a wonderful help in keeping the shirt bosom clean. I would prefer one about my own age, forty-seven. (I don't make a business of telling my age.) I don't want any younger, but anywhere under ninety, providin' his brain is fertile, clear and active. Would like for him to be a farmer, but must not look like one. If he don't know how to farm, he does not need to come from Missouri, but I can show him. If he is too old to do the labor, that will be all right just so he knows how to make the hired hand hustle. I will not object to him having lots of money or being real neat around the house. The one I have now does not have lots of money but is very neat around the house. He knows where I keep the rollin' pin. This I use to make him nice biscuits and pies (when he is home). I am in a little hurry about this trade as our club will soon give its annual banquet which is always a grand affair. Mrs. Calland and myself are the only ones that never have an escort. She is a real-for-sure widow. I will not request my escort to wear a dress suit, just so he looks genteel. If he can't drive a Haynes I will furnish the car and do the driving, but will draw the line if he is not chipper enough to get in the car without my assistance. I always like to make a good trade and will not ask any boot this time. I might consider a good sound pair of mules or about three good registered jersey cows. Please send your photograph and I hope it will be nice lookin'.

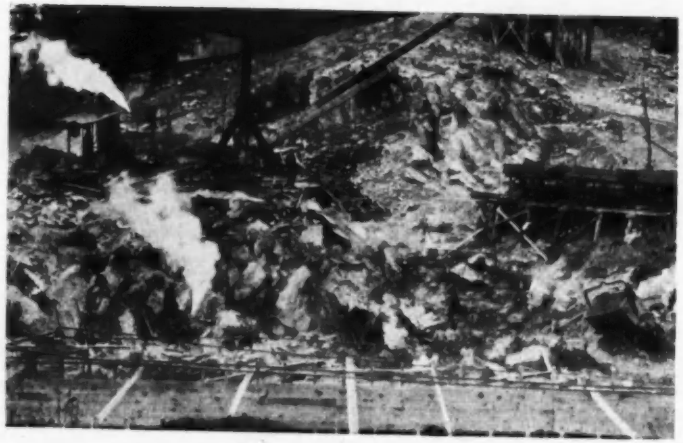
Anxiously waiting, yours
Mrs. Geo. W. Williams.

P. S. I would like to see Mrs. Calland find a good man (not a steam shovel man) for she is a very nice intelligent lady, but don't forget to write me first.

Easy Picking

"How quickly does your machine pick up?"
"Oh, on good nights I have a couple in fifteen minutes."
—*Gargoyle.*

General view of the scene of operations. In the center may be seen the 18-B Bucyrus in operation. This photograph gives a good idea of the general character of the country.



Handling boulders with a ¾-yard heavy-duty orange peel bucket. Boulders weighing up to seven tons were handled successfully in this manner. This operation is described more fully in the text.

Corewall under construction, showing the chute system of handling the concrete in conjunction with travelling derrick and buckets from the end of the concrete wall to the mixer plant.

Another view of the dam under construction. Note the roller packing down the earth embankment and the mixer plant at the far end of the wall.

Revolving Shovel Work on the Phelps Brook Dam for the City of Hartford Water Works

How small revolving shovels proved their fitness for digging picked material for an earth-fill dam.

THREE revolving shovels have been used in conjunction with the construction of the Phelps Brook Dam for the City of Hartford Water Works. This work is interesting particularly as it illustrates the value of a revolving shovel for the type of work such as this, where heavy shovel operation is impracticable owing to existing conditions which are described herein.

Description of Project

Before we come to a more detailed description of the revolving shovel work above mentioned, it might be of interest to describe briefly the work which the City of Hartford has had under way, of which this dam is a part.

The Phelps Brook Dam is one of three which have been constructed during the past summer in the vicinity of Collinsville, Conn. Two of these dams are earth with concrete corewalls and the other is cyclopean masonry of gravity construction. This latter dam impounds a reservoir containing 9,000,000,000 gallons of water and covers an area of 852 acres. These dams are being constructed by the F. T. Ley Construction Company of Springfield, Mass., L. Suzio of Meriden, Conn., and the Pierson Engineering & Construction Company of Hartford, with an aggregate outlay of $875,000. In order to impound enough water to compensate the manufacturers along the Farmington River below the above mentioned reservoir, it has been necessary for the City of Hartford to construct in New Hartford, an additional dam. This dam is also of earth with concrete corewall, the cost of which will approximate $400,000. The contract was awarded in September, 1915 to C. W. Blakeslee & Son of New Haven, Conn.

Description of Phelps Brook Dam

The Phelps Brook Dam as stated above, was constructed by the Pierson Engineering and Construction Company. It is situated at Burlington, Conn., high up in the hills just out of Collinsville about 1¼ miles from a railroad station. Inasmuch as the hills were very steep, with grades running up to about 7 per cent, it was deemed advisable to do all the hauling of the material and equipment by motor truck and therefor, two 5-ton White trucks have been kept busy the greater part of the time. This is but one of many cases which are becoming more and more common, where contractors find it economical to replace horses and wagons by the more modern and more efficient motor truck.

The dam has a concrete corewall with a fill of loam, sand and gravel on both sides. The work is approximately 1250 feet long by 65 feet high and contains about 250,000 cubic yards of embankment and about 10,000 cubic yards of concrete. The greatest height from the deepest foundation to the top is 97 feet and the greatest thickness at the toe is about 360 feet. The top width is 15 feet. There were approximately 5,000 lineal feet of 3-inch grout holes drilled into the foundation of the dam under the corewall in order to form a binder for the dam. These holes were approximately 25 feet deep and staggered 7½ foot center to center and were grouted at a pressure of about 75 pounds per square inch.

The construction of the dam called for the excavation of 23,000 cubic yards, 7,500 cubic yards of loaming, 9,000 cubic yards of paving and rip rap and about 170,000 cubic yards of metal work. The whole cost of the dam was about $250,000.

Excavating material for the earth-fill dam. In spite of the large amount of heavy material that had to be handled, this type of shovel was found better than a heavier shovel because of the large number of light cuts and the great amount of moving necessary. Observe the hood over the smoke stack to prevent fires.

Steam Shovel Work

The amount of material required for the fills would under ordinary circumstances have called for a heavier type of shovel and one of greater capacity than those used, but conditions rendered the operation of a large machine practically impossible. The reason for this was that the material for the dam had to be taken from a basin covering an area of about 400 acres and furthermore, it had to be very carefully picked out as it was most important to skip undesirable material. This of course necessitated a great deal of moving around and a large

number of light cuts. Consequently, the revolving type of shovel was ideal for the purpose.

Equipment Used

The outfit consisted of three revolving shovels, an 18-B Bucyrus equipped with a ⅞-yard dipper and No. 1 and No. 0 Thews, one Vulcan and five Porter, 11″ by 16″, 18-ton locomotives for hauling, 4-yard Koppel cars and a small 8-ton locomotive for the concrete. In addition to this there were two steam rollers, one Municipal Engineering Co. concrete mixer, one compound air compressor, Cameron & Worthington pumps, steam drills and four stationary boilers together with the crushing plant, repair shops and two 5-ton White auto trucks. The output of the 18-B Bucyrus shovel ran between 600 and 900 cubic yards in a 10-hour day. This machine was operated by John Reed with Lewis Fletcher as fireman.

Handling Boulders with a Grab Bucket

One interesting feature of the excavation called for the use of an orange-peel bucket. It was found on testing with Diamond drills and by test holes dug in the usual manner that about one-third of the way in from the southeast of the dam, there was a deep hole which required a considerable amount of excavation before reaching bed rock. This hole was found to be filled with a large percentage of boulders weighing from one to fifteen tons. To handle these, a heavy derrick was erected with an 80-foot mast and boom which was used to operate a heavy-duty orange-peel bucket of ¾-yard capacity. In spite of the small capacity of this bucket, boulders weighing as much as 7 tons were moved at one time and not an accident occurred while this plant was in operation. It was later found that the boulders approximated 70 per cent of the total excavation.

It will be observed from one of our photographs that the 18-B Buycrus shovel has a device on its smoke stack that resembles a tin can. This so-called hood has a screen top and bottom. It is used on the dinkies as well as on the steam shovels for the prevention of fire.

The contract for this dam was started about April 14, 1914 and was completed the first of September, 1916. Although the contract was an exceedingly difficult one, rapid progress was made, due to the untiring efforts of Andrew C. Lindberg the superintendent, to whom we are indebted as well as to A. L. Rivers, steam shovel engineer, for a great part of the above material.

Hard Going on State Road Work in Sussex County, New Jersey

The Franklin Construction Company are at present at work on a 6.55 mile state road contract in Sussex County, New Jersey, which they began on June 1st. They are operating on this job their 14-B 2-3 yard Bucyrus revolving shovel. Progress has not been particularly fast due to the large number of springs which have been encountered. These springs made it very difficult for the teams to get to the shovel. In the photograph which we publish herewith it will be noticed that water is springing up all around the shovel and that the men in the foreground are making the roadway for the wagons with timber and covering this with gravel. The horse on the right is an extra one in order to assist in pulling the wagons out of the pit. In spite of these difficulties the soft ground has not bothered the shovel operation itself. The material encountered is sand, gravel and clay with small boulders and some rock. Five teams have for the most part been in service, but six were used when it was possible to get them. Mr. Albert Kruse who is operating the shovel and to whom we are indebted for this information, tells us that at first he found it a very inconvenient place to reach as it was necessary to walk three miles, but his troubles are all over now as he has purchased a Ford.

14-B Bucyrus in wet digging. Note water around shovel. Men making roadway for teams.

An Appeal to the Railroads

A billion's not bad
And the people are glad,
The railroads made it last year,
But the contractors, Oh!
Have been treated so
They begin to get desperate, I fear.

Conditions are tough
And we've all had enough
Of this idle contemptible wait,
So please get a move
And begin to improve,
Do it now, before it's too late.

—*By Marks in Steam Shovel and Dredge.*

Oh! Mary!

The teacher was examining the class in physiology. "Mary," she asked, "what is the function of the stomach?"

"The function of the stomach," the little girl answered, "is to hold up the petticoat."—*The Yellow Strand.*

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THE EXCAVATING ENGINEER PUBLISHING CO.

Bradlee Van Brunt, Manager and Editor

South Milwaukee, Wisconsin

Construction Outlook

Judging from the reports that we hear from various sections of the country, our predictions in regard to the improvement in construction work of all kinds still hold. When we look back over the railroad construction completed during 1916, there appears to be a little improvement over the previous year. This improvement will undoubtedly be augmented considerably as months go on. There is a marked activity in spite of the higher cost of construction, which higher cost will be discounted to a great degree by the general prosperity of the roads and by the pressing necessity for new construction.

During the past year there was a practical cessation of railroad construction in the middle western states where adverse legislation was most active. In fourteen states there was no new line built while in states such as Iowa, Missouri, Nebraska and South Dakota, the construction was practically negligible. Many projects for double tracking which have been held up will now be put through. This is particularly the case with the Erie and the D. & H. between Chicago and the seaboard.

The total mileage of new first track built during 1916 was 1098.41 with a little over 312 miles of second track, Montana leading the country with a little over 99. The longest single continuous line built was the Charleston Southern, a part of the Seaboard Air Line, 88 miles in length.

It is interesting to observe the large falling-off of railroad construction in Canada. This of course was partially due to the war, but it cannot be doubted that excessive construction in this country during the past decade has resulted in over-construction. The decline in fact began before the war started and we cannot hope for much improvement during the forthcoming year.

Motor Trucks in the Army

During the year 1916, the War Department, Quartermaster Corps, Ordinance Department and Engineer Corps of the U. S. Army purchased approximately 3000 motor trucks of various capacities ranging from 1½ to 3 tons. It is interesting to observe that previous to 1916 there were only 65 trucks owned by the above mentioned arms of the Service.

A very large proportion of these trucks are in service or in storage in and around the San Antonio district. In fact there are approximately 2000 motor trucks here. These trucks are for the most part, White, Packard, Peerless, Riker, Kelly-Springfield, F. W. D., Jeffrey Quad, Velie, and a few other makes.

According to indications, the year 1917 will witness an enormous increase to the number already purchased. The Quartermaster Corps proposes to purchase $1,000,000 worth more. The Ordinance Department, $1,500,000 worth of motor trucks and cars, principally with armored bodies. The Engineer Corps is asking for an appropriation of $1,000,000 for this purpose and the Medical Corps will doubtless buy a large supply of trucks and passenger chassis for the mounting of ambulance bodies.

Colonel Harding Governor of Panama Canal

Lieut. Col. Chester Harding, Corps of Engineers, U. S. A., was nominated on January 3rd, 1917, to be governor of the Panama Canal succeeding Major General George W. Goethals, U. S. A., who is retiring from office at his own request. Colonel Harding has been engaged on a large variety of important engineering projects. He was born in Mississippi in 1866, graduated from West Point in 1889 and from the Enginering School of Application in 1892.

Among other duties, Colonel Harding has been connected with river and harbor improvements in the Chicago district and improvements of the Mississippi River from the mouth of the Missouri to Cairo, Ill. He served in the office of the Chief of Engineers at Washington, and at West Point as Instructor in the Department of Civil and Military Engineering. He was assistant in local charge of the submarine mine defense of Narragansett Bay, and was on duty at Grand Rapids, Mich., in charge of river and harbor improvements of the east shore of Lake Michigan. He was assistant to

the Engineer Commissioner of the District of Columbia, was supervisor of construction of the new Municipal Building, at Washington, and Instructor in the Department of Civil Engineering at the Engineer's School at Washington Barracks. In August, 1907, he was ordered to duty at Gatun, C. Z., Panama, as division engineer and was a member of the Isthmian Canal Commission and rendered highly efficient duties in connection with the canal work. Colonel Harding's service as chairman of the public utilities commission of the District of Columbia gave him valuable experience in administrative and judicial matters. As engineer of maintenance at the Canal Zone, Colonel Harding was Governor Goethals' right-hand man and acted as governor of the zone during the latter's absence. As engineer commissioner at Washington, Colonel Harding initiated many valuable improvements. His successor in the position of engineer of maintenance on the Canal has not as yet been selected, but the Lieut. Colonel Jay J. Morrow, Corps of Engineers now on duty of the Canal Zone, is most prominently mentioned for the place.

Progress in Uniform Boiler Laws

As noted in one of our recent numbers, the first American Uniform Boiler Code Congress was held at Washington, D. C., under the auspices of the Industrial Board of the state of Ohio. As a result of this congress it seems very probable that bills will be introduced in Texas, Michigan, Minnesota, Kentucky, Illinois, Missouri, Connecticut, Rhode Island, New Jersey, Virginia and Tennessee at the next meeting of their legislatures. This legislation will be in the form of an Enabling Act passed to instruct some department already in existence to draw proper rules governing the construction of steam boilers. It has been found from experience that it is decidedly impracticable to attempt to put any technical legislation on the statute books, but if an Enabling Act is passed it will be with the understanding that the ASME Boiler Code be adopted by the proper department.

In this connection we are glad to announce that the Ohio Board of Boiler Rules have officially announced that the ASME Code will replace the Ohio Code on April 1st, 1917 so that thereafter there will be only one code in effect in Ohio.

Another important news item in this connection is that the Massachusetts representative, Mr. Geo. A. Luck voted in favor of the resolutions at the Boiler Code Congress and it is believed that he will personally endeavor to assist the movement for the general adoption of the ASME Code so that it may receive due recognition in Massachusetts.

Reports from the American Uniform Boiler-Law Society indicate that the success of the ASME in the most prominent states of the Union is thoroughly assured, but it will not do for a moment to relax the vigor with which this matter has been followed so that parties interested in having uniform boiler legislation may consider this as an invitation to take the matter up with their representatives in order to influence them to take favorable action in the matter.

TRADE NOTES

Our readers will be interested in a new sales development in the contractors' equipment field. The Lakewood Line of contractors' equipment, Owens-Wylie concrete chute systems, Milwaukee and Wisconsin concrete mixers and street pavers will be sold under one sales management by the Lakewood Engineering Company

The new plan contemplates the development of an organization capable of building and marketing a really complete line of contractor's equipment.

A volume of business is anticipated sufficient to command the services of the very best men in the industry.

Following is the personnel of the new organization:

Chas. F. Lang, President Lakewood Engineering Co.

N. F. Teschan, President Milwaukee Concrete Mixer Co.

Roy G. Owens, Manager Contractors' Equipment Dept.

Lloyd Brown, Manager Car Dept.

W. A. Meddick, Assistant Manager, Car Dept.

H. Walter Sykes, Manager Electrical Industrial Equipment.

W. G. Grail, Manager Clam Shell Bucket Dept.

V. Truelson, Chief Engineer, Milwaukee Plant.

Jas. Lockhart, Chief Engineer, Car Dept., Cleveland.

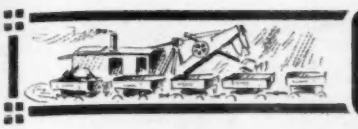
Thos. D. Maley, Chief Engineer, Contractors' Equipment, Cleveland.

Henry T. Pleines, General Supt., Cleveland.

The slogan of the new organization will be "Link up With Lakewood."

A new connection has just been made by the Troy Wagon Works Co., Troy, O., with the Tennessee Auto Sales Co., 251 Monroe Ave., Memphis, Tenn. for the handling of Troy trailers. Their territory includes Tennessee and northern Mississippi.

The maintenance survey of concrete pavements in the United States recently undertaken by field engineers of the Portland Cement Association, is progressing satisfactorily. According to late reports, nearly 20,000,000 of the 70,000,000 square yards of such pavements have been examined and reported upon and it is expected the work will be completed during the course of the next month. Over 100 engineers stationed in various parts of the country are making this inspection. One of the objects of this survey is to secure data based on actual experience so that methods of construction and maintenance that have produced the best results may be definitely determined with a view to raising the standards of practice in concrete pavement construction generally. When this work is completed, the Portland Cement Association will have a complete history of all concrete pavement in the United States—roads, streets and alleys.



· FIELD NOTES ·

QUESTIONS pertaining to the operation, maintenance or repair of excavating machinery will be answered through this column. Address, Field Note Department, Excavating Engineer, South Milwaukee, Wisconsin.

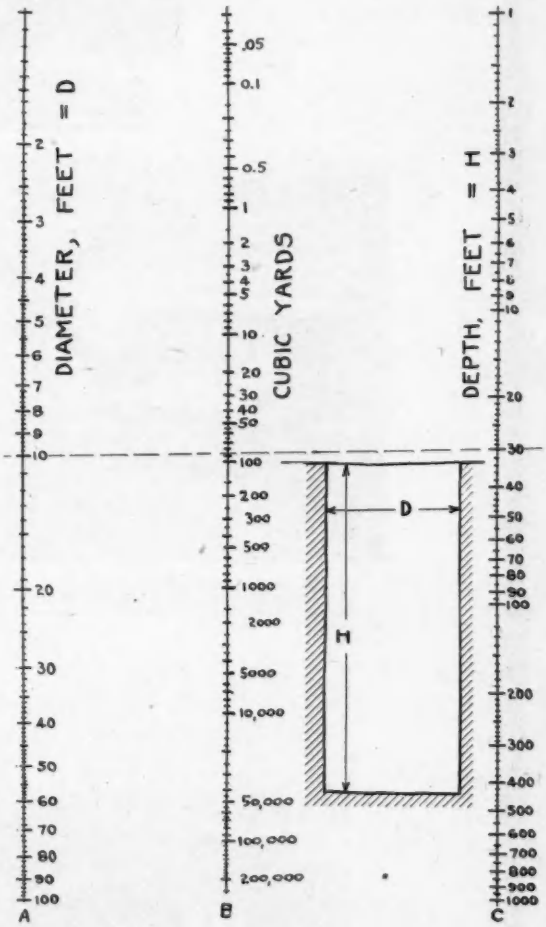
The Correct Method of Socketing Wire Rope

First measure on the end of the rope a length equal to the basket of the socket. Serve or bind this with no less than three wraps, then cut out the hemp center and open the strands separating the individual wires in the strands. Crooked wires may be straightened by means of an iron pipe. When this is done, cleanse it with kerosene and wipe dry, then dip the wires into a solution of one-half muriatic acid and one-half water, being sure that the solution is no stronger than this. The wires should be kept in this solution long enough in order to be thoroughly cleansed. When this is done wipe them dry. Serve or bind the end so that the socket may slip over the wires easily. After placing on the socket, cut the serving wire at the top having all wires evenly distributed and even with the top of the basket. Fire clay should then be placed around the bottom of the socket. After this is done, pour in molten pure zinc, and remove all servings except those nearest the socket and knock off the fire clay. After cooling, it is ready for service. These directions are given by the John A. Roebling's Sons Company.

The above method as described by Roebling is a very good one, where all conditions are met exactly and where the proper asset and where pure zinc can be secured readily. Babbitt or anything but pure zinc will not do the work effectively as it does not adhere so closely to the wire. Under field conditions, another method is often necessary which can be done with materials more readily available. The process of serving the rope is carried out as above explained with the end of the wire being allowed to project through the socket an inch or two. Using a pair of heavy pliers, bend the end of each wire over on itself in the form of a loop or hook. After this has been done, these wires should be pulled down so that they are below the top of the basket of the socket. In order to facilitate this, it may help to bind this bunch of loose ends just below the bend with a piece of wire or light line. They may then be hammered down into the socket, an ordinary babbitt put in in the same manner as described above for the zinc. In making this sort of attachment, it is not absolutely necessary that the wires be perfectly clean, but of course the cleaner the better and it is essential to wash them with kerosene or gasoline to remove oil.

A Handy Chart for Circular Excavations

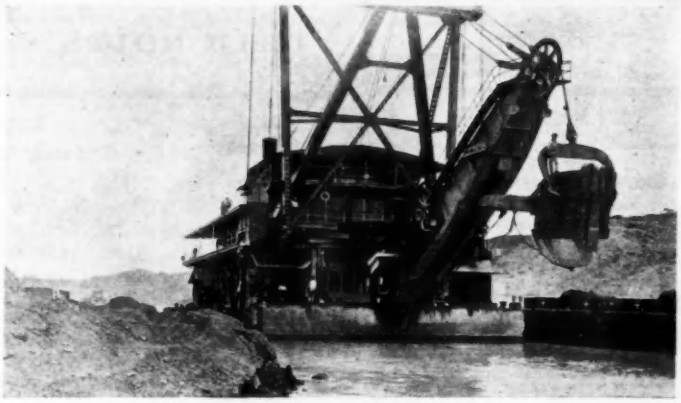
This chart will be found handy by engineers and contractors in general for determining the yardage in circular excavations such as circular pits, cofferdams, wells and shafts; circular tunnels; space occupied by circular sewers, etc. Its application to engineering is practically unlimited.



Simply lay a straight edge across the chart and column B immediately gives the yardage.

For example: How many yards must be excavated to make a pit 10 ft. in diameter and 30 ft. deep?

(Continued on page 183)



Bucyrus 15-yard dipper dredge *Cascadas* holder of the world's record for three 8-hour shifts. This record was made on the Panama Canal on February 18, 1916. 23,305 cubic yards were excavated in three shifts as follows: The first shift, C. E. Peterson, engineer, 8,015 cubic yards; second shift, 7,665, W. A. Tedford, engineer; third shift, 7,625, W. A. Barton, engineer.

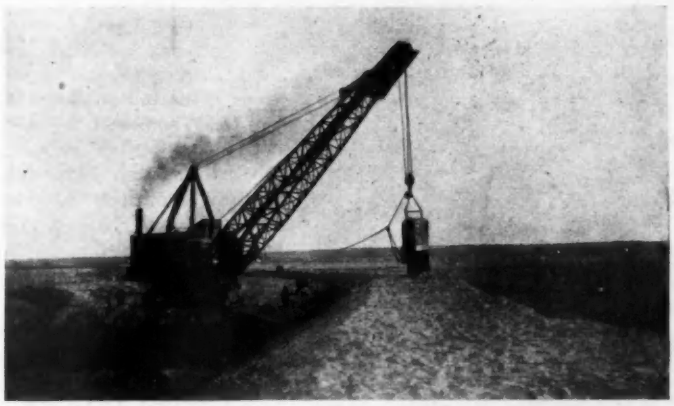
Excavating for the Hotel Statler in St. Louis. 17,000 cubic yards were moved by Fruin & Conlon's 18-B Bucyrus in 60 days. Notice slots on platforms under the shovel. These are to facilitate the quick attachment of chains for moving the sections.

J. E. Hilton's [illegible] work on the [illegible]

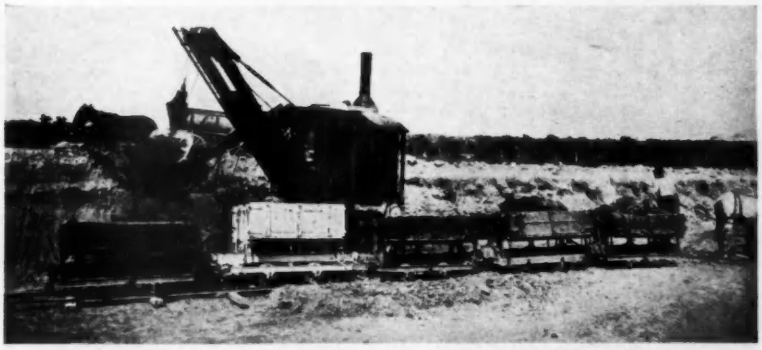
Novel method of launching a scow on D. B. Gore & Company's levee job near New Orleans. This was built bottom side up on the bank and launched by attaching a line to the bucket of the class-20 Bucyrus dragline shown in the picture and the other end to the corner of the scow as may be seen. It is shown being tipped over in the water very successfully. D. B. O'Bannon was superintendent in charge. The scow is 24 feet long, 4 feet deep and 14 feet wide. It contains a 2-foot compartment on the bottom for holding fresh water for the machine and a top compartment for coal and supplies.

Excavating for Wanamaker's garage on Broadway and Waverly Place, New York City. F. H. Chapman Contracting Company's 18-B Bucyrus shovel averaged 175 4-yard wagons per day with a 700-foot haul, despite delays. Material mostly old foundations. W. Parkinson, engineer, W. Gable, fireman.

Bucyrus dragline at
Platte Project
Wyoming.



Winston Bros., class-20 Bucyrus dragline finishing up their contract on the North Platte Project near Lingle, Wyoming. Note the neat appearance of the embankment.



F. A. Grant's 14-B, ⅝-yard Bucyrus shovel loading 1½-yard Western cars on a million dollar job at University City, Mo. Depth of cut 7 feet, material 75% clay and 25% solid rock, blasted. Contract awarded to Fruin & Conlon who handled 100,000 yards with his 18-B Bucyrus. Grant moved 200,000 and the remainder excavated by Harrington Bros., with elevating graders and wagons, 30 Western one and one-half-yard cars used in 5-car trains hauled by mules 2600 feet. Note water wagon for serving shovels. Job completed January 1st.

UMI

DEVICES YOU OUGHT · TO KNOW ABOUT ·

Portable Hoists a Boon to the Contractor

Within the past twelve months there has been a remarkable growth in the application of small air and steam operated hoists in the various fields of quarry and excavation work. These machines, of which the Little Tugger (Fig. 1) is a typical example, were developed for light hoisting and handling in underground mine workings. The field of their application spread very quickly and contractors soon learned that they could apply the same machines to innumerable small jobs which had called for uneconomical hand labor.

Portable hoists in above ground service are widely used for haulage over distances up to 700 feet, this being the capacity limit of the rope drum. Conditions vary from handling 2500-pound cars on a 30-degree incline to several tons on a slight grade. Fig. 2 shows a typical installation. Steel cars in coasting down an incline and up a slight grade often fail to carry to the crossover switching point. When such a tie-up occurs, an air hoist, bolted to a timber anchorage, draws the stalled car up to the switch. This hoist, also a Little Tugger, has proven entirely capable of handling two 6½-ton cars on this 5 to 6 degree grade. Hoists of this type are giving excellent satisfaction in car haulage work of similar nature in a number of other quarries.

Fig. 2 "Little Tugger" in operation hauling a car. Note simplicity and compactness.

Fig. 1. "Little Tugger" portable air hoist installed at Rockland Lake Quarry for hauling cars.

In handling men and machines on quarry faces and in and out of quarry pits, these little machines have proven of great advantage in replacing a cumbersome boom hoist, for small jobs. Their 1000-pound capacity is ample for the handling of supplies, drills, explosives and the like.

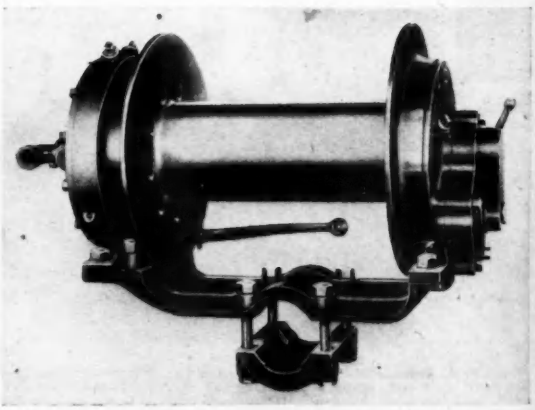


Fig. 3. "Little Tugger" hoist for use with 300 feet of ¾-inch manila rope. Its bare weight is 359 tons

Little Tugger hoists in quite a few instances have been economical and efficient assistants in the placing of machinery on foundations, although borrowed for this service from more routine work. One hoist is snaking logs from the beach to a sawmill, another handling freight cars on a siding, a third hauling a scraper and so on.

The foregoing is but a brief hint of work that can be done without attempting to detail the hundred and one different applications.

Portable hoists of the Little Tugger type are available for use with either wire (Fig. 1) or manila rope (Fig. 3). They are capable of rendering trustworthy service without special attention. Automatic lubrication makes an occasional filling of the oil reservoir all that is required. A worm-operated band brake effects positive control when lowering heavy loads. All levers are handy though short and out of the way from injury.

These hoists weigh about 300 pounds when ready for work. The base of the hoist is provided with a clamp that fits any 4½-inch pipe or column or, by removing the clamp, the hoist can be bolted direct to timbers or other convenient support.

When mounted on a timber skid a Little Tugger is readily movable by two men, is easily anchored where wanted and is always ready for work. A mounting such as this has much to recommend it.

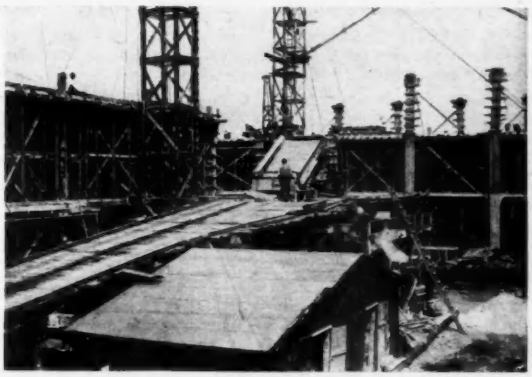
Compressed air operated hoists are the rule, but similar steam-driven hoists are giving equal satisfaction in daily service.

Little Tugger hoists are manufactured by the Ingersoll-Rand Co., Bowling Green Bldg., N. Y.

Increasing the Efficiency of Motor Truck Haulage on a Construction Job

Many building contracts are figured on a time basis and the speed and increased efficiency with which cement, sand slag, gravel and crushed stone may be handled by the use of motor trucks, has saved large sums for the contractors.

Very often on big jobs, special devices for loading and unloading have been constructed to facilitate the operation of the trucks and a striking example of this is the use of a fleet of nine White power dumping trucks owned by the Cleveland Builders' Supply Company on the construction of the new $500,000 building for the Richman Bros. Co., Cleveland.



Dumping the load

The structural work of this building is largely concrete and many tons of sand, cement, and gravel are mixed daily. In order to do this work as speedily as possible, the contractors have built a platform of heavy wooden beams on a level with the second story of the structure. Leading up to this platform there are two inclines built of heavy planks and with a grade of above 10 per cent. The White trucks with their 5-ton load are driven up the incline on one side of the platform. The loads are dumped through an aperture in the platform and the trucks driven across the platform and down the incline on the other side.

In this way the trucks are kept running continuously and no time is lost in backing and maneuvering around to find the most advantageous place for dumping. Contractors have highly praised the platform device and say that it saved a great deal of time and money.

5-ton White truck climbing incline

(Continued from page 179)

Connect the 10 (column A) with the 30 (column C), and column B at once shows the amount to be very close to 87 cubic yards.

The chart will be found to be sufficiently accurate for nearly all work of this nature, and the range is wide enough to include nearly every size of circular excavation ever made, or likely to be made.

Photographic copies of this chart about 10 inches high by 7 inches wide, may be obtained for $0.60 each by writing the *Excavating Engineer*.

N. G. NEAR.

SHOTS FROM THE · FIRING LINE ·

Arizona

Leo Dohoney formerly of Ruth, Nevada, moved a month or so ago to Ajo, where he can be addressed, care of The Cornelia Club.

California

M. D. Goodbody of San Diego has been awarded a contract for building a new intake canal above Hanlon. This is about 600 feet long and involves 600,000 cu. yds., of excavation. It is mostly a steam shovel job.

R. P. Shields Construction Company of San Diego has been awarded a contract for the Tecolote cut-off canal south of the Mexican line. This is a mule job.

Contract for earthwork and masonry for a branch railroad from Pico to Santa Ana for the Salt Lake Route has been awarded to Robert Sherer & Co., Los Angeles, Cal., at about $1,400,000.

Contract for grading roadbed for a twelve-mile extension of one Southern Pacific from Calipatria to Westmoreland has been awarded to Jackson & Lockhart, Brawley, Cal.

From Sunny California

BY F. W. SCHUMACHER

We were recently visited by W. H. Darragh and C. L. Crow, who hail from South Milwaukee. They stopped over on their way to Bangkok, Siam, where they are going to operate a Bucyrus 175-B steam shovel, which is also equipped to operate as a dragline, for the Royal Siamese Government.

The Robt. Sherer Co. has secured another railroad contract, having been awarded the 7-mile new line from La Habra to Fullerton, for the Pacific Electric. The contract amounts to $54,000 and includes preparing the right-of-way and constructing the bridges and a number of culverts, this work having been sublet to the Wm. Ledbetter Co. The Sherer Co. is now at work on the 18-mile Salt Lake line to Anaheim.

Carl Erhart, a San Francisco contractor, has secured a contract for a section of Hunter Point Road amounting to about $50,000.

C. N. Ballentine from South Milwaukee was a recent visitor in San Francisco. Believe me, Ballentine saw pretty near all there was to be seen and we have come to the conclusion he rather likes to stick around once in awhile. Details will be furnished on application.

Billy Gallagher and Teddy Krantz are still on Lee Moor's 60-C at El Paso, Tex.

Jack B. Keller is running a 70-ton Bucyrus for Sharp & Fellows on Santa Fe work at Gallup, N. M.

N. B. Parnell, superintendent of steam shovels, Southern Pacific Co., was a recent caller.

Smiling Joe Lacey is still sticking around.

William Horne is craning a 95-ton Bucyrus for the Southern Pacific Co.

Fred Stowell is running a steam shovel for the Keystone Construction and Logging Co., at Thalheim, Cal.

M. J. Woznack dropped in to give us the "once over."

Bill Geraghty paid us a call lately and is looking for a chance to furnish super-heated steam on a Bucyrus.

Al Adams recently visited us at this office.

We wonder what has become of Bert Van Horn. We thought he had become a regular "Native Son" but he seems to have dropped us entirely.

E. J. Monihan dropped in to have a "look see" and wanted to know what was the latest news on big construction work. He says he will have to get busy soon so he can eat regular.

Jim Daly, Jack O'Neill and "Society Red" Larsen are running Erikson & Petterson's Bucyrus 45, near Richmond, Cal.

Oscar Burke, Joe Hudner, J. Fox, with Mike Coleman on the grave yard shift are running a shovel on the Hetch Hetchy work.

Harry Hauser and Ed. Grover have just finished up R. B. Markle's road job for the season and have tucked away his Bucyrus 14-B, until after the rains.

Frank Shoemaker, Leo Dohoney, Al Murray and Chris Zinng have all left for Ajo, Arizona, where the New Cornelia Copper Co. are starting their open cut work.

H. B. Hobbs is up and about again and looking quite well, but he informs us he had been laid up with a very severe cold, which almost developed into pneumonia.

James J. McGinnis is operating a model 41 for Bates Borland & Ayer at the San Pablo Dam. Tom Bryson is craning and Jack Dooly firing.

Harry Sweet left Sunny California and is now at Ruth, Nevada, for the Nevada Construction Copper Co. We are given to understand that he finds the weather quite chilly and here it is sunshine on Market St.

Jim Puryear, Geo. Raymond and C. W. Elledge are now regularly installed as fixtures at Ruth, Nevada.

Wm. Horne is craning a Bucyrus shovel for the Southern Pacific Railroad at Dunsmuir.

Canada

Montreal and Vicinity

BY B. ST. JOHN

Plans are now being prepared by the Ontario Hydro-Electric Power Commission, University Avenue, Toronto, for the proposed power canal from Chippewa Creek to Queenston, a distance of twelve miles. About eighteen steel bridges will be required to carry roads and railways over the canal. Chief Engineer, F. A. Gaby.

Reports indicate that another municipality besides Goderich, defeated the Chippewa Creek development plebiscite. The ratepayers of Waterford, a Norfolk County village, turned down the proposition by a vote of 92 to 21.

The Railway and Canals Department has announced that the finishing touches will be put on the eastern section of the Trent Canal during the next three or four months, and the waterway from Lake Simcoe to Trenton on the Bay of Quinte will be opened for through traffic early next summer. The Severn River end of the project, giving outlet to Georgian Bay, will not be completed until after the war. Practically all that remains to be done on the Trenton end of the canal is to complete a few locks and the bridge over the Grand Trunk Railway at Campbellford.

Announcement has been made at Ottawa that the seven million dollar contract for the improvement of the harbour of St. John has been given up by the contractors, the Norton-Griffiths Company. Work on the contract has been discontinued. In addition to the actual harbour work the plans included the construction of a large drydock on a subsidy basis. It is regarded as unlikely that the Public Works Department will take over the uncompleted work. If the completion is not to be deferred until after the war the contract will probably be transferred. Something like $3,000,000.00 has already been expended on the undertaking.

Vancouver and Vicinity

BY A. G. BROWN

Mr. J. B. McLean, of the Winnipeg Aqueduct Construction Co., was a visitor to the Coast this month. He was too busy to give us more than a week, but he'll be back again.

The Northern Construction Co. have started work on the construction of the wharf at James Island, Vancouver, for the Canadian Explosives.

George S. Rice, chief engineer of the United States Bureau of Mines, Washington, D. C., has been engaged by the Provincial Government of British Columbia to make an investigation of the Coal Creek coal areas of the Crow's Nest Pass Coal Co., near Fernie, B. C.

The City of Victoria, B. C., has under consideration the construction of a 70-mile highway in co-operation with the Vancouver Board of Trade between Hope and Princeton as part of proposed Canadian National highway.

A contract has just been let to Messrs. Jones and Rant, a firm of Victoria contractors, by the Valdez Copper Co., Ltd., for the purpose of opening up their property on Valdez Island.

Mr. B. F. Johnson of the Bucyrus Co. spent a few days in Vancouver early in the month. Here's hoping that he took away such a good impression of our town that he will come again.

Fred Walgren is operating a Bucyrus dragline on the Winnipeg Aqueduct for the Winnipeg Aqueduct Construction Company.

The tearing-up of 1,000 miles of railway in Canada, was recently begun in compliance with the request made by the Imperial Government that it assist in the solution of the difficulties existing in the French railway situation, both in the relief of the congestion of war supplies and the movement of guns and munitions behind the firing lines. Laborers, it is said, are now at work removing 300 miles of Canadian Government railway sidings, and it has been decided to tear up 220 miles of rails between Edmonton and the Pacific coast, where the Canadian Northern Railway and the Grand Trunk Pacific run parallel to each other; traffic, it is stated, will be thrown upon the remaining line between these points. It is said that rails will also be obtained from the lines of the Transcontinental Railway and the Hudson Bay Railway. In issuing its call on Canada two weeks ago, the British Government is said to have stated that prompt action would save thousands of lives, and that the war could be materially shortened if the necessary railway facilities were promptly provided. The tearing up of the excess railway mileage in Canada is said to have been resorted to only after a canvass of the Canadian steel situation showed that it would be impossible to obtain new rails owing to the fact that the mills were busy on munition contracts. It is said that twenty miles of rails will load one steamer. One cargo, including rails, tie plates, bolts, and spikes, it is stated, is already on the way to the seaboard. Soldiers will be employed to tear up the rails, it is stated, when laborers cannot be obtained.

Florida

Contract for constructing a line from Monticello to Perry, Fla., a distance of about thirty miles, for The Atlantic Coast Line, has been awarded to Wade, Clower & Wade, Sebring, Fla.

Clack & Wright, of Jacksonville, have been awarded contract by the Baldwin Drainage District, for construction work in Duval County, comprising about 1,500,000 cu. yds. of excavation, with small number of bridges and concrete spillways.

Foreign

Africa—J. J. Lane is operating a 40-R Bucyrus steam shovel for the Union Miniere du Haut Katanga at Kambove Mine in the Belgian Congo. Mr. Lane tells us that his shovel has made 1100 cubic yards of rock and earth in an 8-hour shift which is a very good going for conditions which exist in this part of the world.

Georgia

F. von Sprecken, first assistant engineer of the Atlantic Coast Line at Savannah, Ga., has been appointed division engineer with headquarters at Waycross, Ga.

Illinois

In our January number Mr. Newt. Wilcoxon reported under his Twin City notes that the Chicago Anamosa & Northern Railroad was sold for junk. We have learned the interesting fact that Mr. Herman Sonken, president of this road has made arrangements to ship his entire road abroad to the allies. This road is familiarly known as the "CAN" which name is the biggest thing about the road. It is 35 3-10 miles long and has three locomotives, two combination passenger and baggage cars and six freight cars. It once had ten freight cars, but the four others sort of petered out. In 1910 this road actually made a little over $5,000 in one year, but several passengers quit riding regularly and the profits fell off. As a result, a judgment was foreclosed against it in 1914. Mr. Sonken is president also of the Iowa Short Line which is all of 15 miles long but has 12 freight cars, although only one locomotive and one caboose. The poem below is from the pen of Mr. Newt. Wilcoxon, of St. Paul. We feel that it will doubtless immortalize both the president and his two roads.

Herman Sonken, U. S. A.
Had a road that didn't pay,
Put it in a little C A N
And sold it to the Englishman.
He also owns the I. S. L.
Which has proved a bitter pill,
He should send it C. O. D.
To the Kaiser, "so say we."

Chicago and Vicinity

BY E. C. HINGSTON

Mr. G. L. Woodworth of Iron River, Mich., spent a couple of days in town last week on business matters pertaining to the output of the mines of the Munro Iron Mining Co., which they expect to exceed the year just past. We trust that Mr. Woodworth's mission here was successful and wish him much pleasure on his vacation which he was expecting to take starting this week.

Some of our friends will no doubt be glad to hear that our friend "Hutch" (G. H. Hutchinson of San Francisco and Los Angeles) has come East to spend a short time with us. We don't know what "Hutch" was drinking or how he got loaded, but he certainly must have been loaded on one side as the train jumped the track before reaching Chicago, making him some 7 or 8 hours late and keeping his friends awaiting dinner for him. We have not seen him here, as he went right on without stopping, but we trust he is not going to overlook us before continuing his journey, as we have a few things we would like to show him. It is true we cannot show him much that he has not seen or heard of, but just the same we would like to have an opportunity to have him tell us a few of his good jokes and talk over old times.

We are also to have another visitor, I understand, from the Pacific Coast, Mr. L. T. Russell. We trust he, too, will not forget a few of his old haunts and will drop into the office to say hello, at least.

In general we find business in this territory very good. The Year 1917 appears to be opening up the purse strings of the railroads. We note that the Chicago & Alton is going to spend considerable money in double tracking its line between Roodhouse and Kansas City. We also note that the Northwestern is going to spend large sums in increasing its roundhouses, machine shops, etc.

There are also several smaller projects in the way of railroad work, as well as quite a little road and drainage work in sight. There also seems to be a general waking up of the rock quarries, sand and gravel plants, etc., in this territory.

Frank Wilkenson recently completed the erection of a new class-20 Bucyrus dragline excavator for R. H. & G. A. McWilliams near Quincy.

Kansas

Pittsburg and Vicinity

BY W. S. RUSSELL

The most interesting subject in and around Pittsburg, is the coal business, owing to the fact that this is the coal center of a district where over seven million tons of bituminous coal are produced annually. This causes over half a million dollars to be paid out in wages every month, which keeps things going. We are now having good winter weather with considerable snow and temperature below freezing most of the time.

Coal is king here now, and prices keep up. There is still a shortage of cars and of motive power to move them, which continues to curtail shipments. The mines are all working both underground and surface stripping. The latter are especially busy and many of the steam shovels are running double shift and making good money.

*Prices in the Kansas field are as follows:

Lump, per ton	$3.50
Nut, per ton	3.50
Mine run, per ton	3.00
Mill run, per ton	2.50
Slack, per ton	1.75

*F. O. B. railroad cars at the mines.

We note a most serious situation in many towns and cities, where they are unable to get enough coal to prevent closing down factories and schools. People in residences have had to go to hotels to stay. The coal famine in Chicago is the worst that ever happened with zero weather; and fearful suffering among the poor has resulted.

The Oronogo Circle Mining Company, of Joplin, is installing an 85-ton Vulcan steam shovel purchased from the Bucyrus Company, at its zinc mine at Oronogo station near Joplin. The ore will be stripped first of 30 feet of overburden, amounting to over 360,000 cubic yards. After this, it will be mined with the steam shovel; and it will take several years to work out as the ore is over 170 feet in depth. Mr. S. P. Darrow, formerly with the Ellsworth-Klaner Company of Pittsburg as general superintendent is now with the Oronogo Company. He has moved to Oronogo, and will have full charge of the new mining operations.

We had a pleasant visit with Ed Packard of the Packard-McWilliams coal company the other day. He said they were doing finely with their coal stripping plant at Fuller, Kans., about 10 miles north of Pittsburg. They have rebuilt their model-250 Marion steam shovel and are working every day, after being shut down for six weeks.

Mr. A. S. Raymond, president of the Oronogo Circle Mining Co. of Joplin, spent several days in Pittsburg last month. While here, he purchased an 85-ton steam shovel of the Bucyrus Company which will be used in their zinc mine.

R. H. Sherwood, a prominent coal stripper of Danville, Ill., and W. J. Lester of the Sherwood-Lester coal company of Liberal, Mo., a coal stripping firm, were at Pittsburg for a day or two last month.

H. J. Sternberg, Vice-Pres. of the Minden Coal Company, which operates extensive strip coal fields near Minden and W. H. Meierstein, a stockholder in the company, were visitors at Pittsburg last month. Mr. Sternberg has contracts for digging drainage canals and ditches in Missouri and Arkansas, where they operate several dredges. He had just placed an order with the Bucyrus Company for two class-24 dragline excavators.

J. J. Stephenson and wife are on an extended trip to Texas, where he used to live. They are revisiting his former stamping ground. From there, they will go to Florida and Panama, whence they expect to return by the first of March.

E. S Nevius came down from Kansas City for a day or two last week.

O. S. Hubert of the Cherokee-Girard Coal Company spent a day or two in Pittsburg last month. Their coal stripping shovels near Minden are working every day.

Logan Rives, manager the Arcadia Coal Company at Oskaloosa, was in Pittsburg recently on business.

Harry Miller, superintendent of the Pittsburg Scammon Coal Company, was in town last week. They are working both coal stripping shovels every day, and one of them on double shift.

Phil. Rouse has finished installing a Bucyrus coal loader at Liberal for the Sherwood-Lester Coal Company.

E. T. King has finished installing a Bucyrus coal loader for the J. J. Stephenson and Son Coal Mining Company near Midway.

Geo. Stanbury has finished installing a Bucyrus coal loader for the Ellsworth-Klaner Company near Midway.

There are good opportunities for parties having means to engage in coal stripping in the Kansas field. Strip coal land can be bought or leased at reasonable prices; and there is good money in the business. Further information will be furnished by addressing W. S. Russell, Stilwell Hotel, Pittsburg, Kansas.

The Bucyrus Company has a stock of repairs for its coal stripping steam shovels at the W. L. Sullivan Machinery Company store room. This is a great convenience to operators of Bucyrus steam shovels. The company is located on 7th St., near Broadway, where they also carry a large stock of miners' mill, railroad and contractors' supplies. They are dealers in engines, boilers, pumps, motors, etc., for steam, gasoline or electric machinery. They also have repairs for Bucyrus steam shovels. Mr. Sullivan will give his personal attention to the wants of his customers.

The Hughs Stone Company, 208 East Third Street, Tulsa, Okla., have for sale a model-36 revolving steam shovel, one yard dipper, all in first class condition and working order, having been used only 8 months in their quarry. Price and terms reasonable.

Kentucky

J. M. Bibb of Oolite is operating a steam shovel for the Kosmos Portland Cement Company at Kosmosdale.

Michigan

Donald F. McGrew tells us that he is running a model-28 Marion shovel for the Standard Gravel Company at Milford, Michigan. He started work about Christmas time and recently has been appointed chief engineer on the job.

Minnesota

R. J. Champion has recently left Blue Island and has accepted a position with Winston-Dear Company at Carson Lake. His friends will be interested to learn of the arrival of an eight pound boy at his home at Arvada, Colorado, on December 31st.

News from the Twin Cities

CLAPP, NORSTROM & RILEY

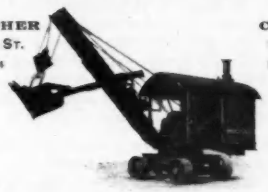
1308 Pioneer Bldg., St. Paul, Minn.

The card which we reproduce herewith is probably the beginning of another firm of the future's big contractors. The gentlemen named thereon are two energetic shovel engineers who each own a Bucyrus 14-B revolving shovel and take contracts either by the yard, month or hour. They have just finished a large yardage contract for the H. Koppers' Company on the foundations of their immense By-Products plant in St. Paul. We can't help comparing this energetic firm with a number of

old timers who started out driving their own teams instead of running their own steam shovels and were proud when they added the title of contractor to their names. Among the millionaire contractors of today who drove their own teams or teams for other contractors just starting in the game, were Bill Kenefick, Sam Lee, Dave, Bob and Bill Kilpatrick. Bros' Bill, Sam Marion and George Ferguson drove teams for their father, Oliver, and Big Jack, Pat and Frank McCaughey Brothers drove their own teams to the million dollar point. Bob Russell was once described in the old "Dirt Mover," as the man from stable boss to millionaire, and is still proud of both titles and looks them.

H. HUEBSCHER
1323 EDMUND ST.
N.W. MIDWAY 4284

C. F. SCULLY
1678 BLAIR ST.
N. W. MIDWAY 3601



HUEBSCHER-SCULLY CO.
Steamshovels for rent by the Yard, Day or Month

SAINT PAUL, MINNESOTA

D. F. Bull of Grant Smith & Company on January 11th, started to drive ten thousand piles for the new Armour plant at South St. Paul, and we have made a wager of a broken throat latch against a new breeching for Jake's Shetland pony, that he will have driven the thousand piles before this item appears in print. Count 'em.

The Denver Boulder & Western Railroad has a suit pending against it for $40,000.00 for personal damages by one R. L. Martin and has offered to trade the whole road for Mr. Martin's claim, but Mr. Martin is a good trader and asks $12,000.00 to boot on the trade and the railroad will consider this offer if Martin will give bond to pay off all the indebtedness on the road in two years.

Jim Costello, the big contractor, carried 354 lbs. up thirteen stories and walked into our office without the least sign of fatigue. To show he could do it again, the next day he brought with him a bell weighing about two hundred pounds. He did not ring the bell but we wrung it easily by hand. Jim says if work doesn't start up here soon, he is going to buy a carload of baskets and hike out for Peking, China, where contractors' gangs consist of Chinks at six cents per day and move dirt by the basket method; and we believe Jim will keep his word.

Hanlon & Okes are making extensive preparations for their St. Charles road work by assembling a new steam and team plant, to be ready for work as soon as the weather permits.

On Monday, February 5th, at 10:30 a. m., the purchasing agent of the City of St. Paul, will take bids for the construction of a concrete high service reservoir, as per plans and specifications on file in the office of the purchasing agent at the City Hall. Bond of twenty per cent of cost to accompany each bid. Cement, reinforcing steel and castings will be furnished by the city. Whole cost of contract is estimated at a million and a half dollars.

Arthur Alexander Ferdinand Anderson, the erstwhile bookkeeper for Clapp-Norstrom & Riley of St. Paul, spent the holidays with friends and relatives in Chicago, and reports on his return, having had the time of his life, and came home fully city broke and "bridal" wise. He says if St. Paul had been started on level ground as Chicago was, and Minneapolis had not headed her off on the west, she would now be the larger of the two towns. Mr. Anderson is now in Butte, Montana in charge of Clapp-Norstrom & Riley's branch office just opened.

It now looks as if the Twin City Belt Line Railway Co., just incorporated, meant business. The capital stock of the company as incorporated is only $100,000.00 but its limit of indebtedness is ten million dollars. They will probably spend on this enterprise when completed including the new depot that will probably be built in connection with the terminal, (if ever?) twenty million dollars. The incorporators are L. W. Hill, president of the Great Northern Railway, Jules M. Hannaford, president of the Northern Pacific, Ralph Budd, assistant to Mr. Hill, George T. Slade, vice-president Northern Pacific Railway and E. C. Lindley, vice-president and counsel for the Great Northern.

The Twin City Barge Line now seems to be assured, and will run from Lake Superior to the Gulf. The representative shippers of the Twin Cities have incorporated and will have all arrangements to complete a barge line from Minneapolis to New Orleans by the time navigation opens next spring. The Chamber of Commerce of New Orleans and the principal shippers of St. Louis have pledged their support to the project which assures its completion and success. J. W. Cooper, St. Paul, is chairman of the board.

D. A. Foley Co., have a large plant of dredges and draglines idle for the winter season but expect to have them all running as soon as spring opens up, on drainage work.

Grant Smith & Co., are making preparations to start their Montana work. Of course, there will not be any team work ready until spring opens. There is some station work which is ready now. They are also making preparations to move and erect their draglines and have them ready when the early spring weather opens up.

Mr. Grant Smith and his manager, Mr. Hunt, have been in St. Paul for the last week bidding on Great Northern work, and as usual carried off a big slice of it. They will begin moving their outfit on this work at once. Other bidders on this work were Winston Bros., Siems-Hellmer & Schaffner, Foley Bros., A. Guthrie Company, of St. Paul, and Porter Bros., of Portland, Ore., and others whom we were not fortunate enough to meet.

Frank Stanley, of St. Paul, has his Osgood revolving shovel in fine shape and will soon be loading Western dump wagons for the City of St. Paul and others.

Huebscher & Skully have just finished up their contract with their two Bucyrus 14-B's loading Western wagons for the Minnesota By-Products Co., and are now shaping up their shovels for other work in the spring. Huebscher & Skully are both practical shovel men and do their own engineering which probably enables them to handle dirt more economically than contractors who have to depend on hired men to run their shovels.

Judge Twohy and son, Robert, spent a couple of weeks in St. Paul bidding on the Great Northern double track work between Havre and Essex, Montana, and landed a good share of it. They will begin moving some of their plant on this work at once. Robert Twohy has been visiting the Doctors Mayo at Rochester, Minn., for some time, and the strenuous exercises he has gone through has eliminated some of the small difficulties he had in breathing. He says he likes it so well he is going to pay them another visit in a short time.

The Mitchell and Northwestern Railroad Company, a new corporation which will construct a 100-mile railroad between Mitchell and Ree Heights, South Dakota, filed articles of incorporation January 20th, with a capital of $2,000,000.

Missouri

St. Louis Items

BY A. B. KOENIG

The P. J. Hannan Co., Boatmans Bank Bldg., St. Louis, Mo., were awarded the contract for a five mile cut-off that the Wabash R. R. Co., are going to build near Dewitt, Mo. This cut-off being necessary on account of the Missouri River encoaching

on their line near this point. The Hannan Co. are going to begin work as soon as the company decides on one of the two locations they have made. This is the heaviest piece of work that has been let in Missouri in several years. Over half of it being heavy steam shovel work.

Ground was broken at Granite City, Ill., for the new $250,000 plant of the Midland Creosote Company of Toledo, Ohio. The property will be located at Twentieth and Railroad streets and will cover about 16 acres of ground. H. M. Newton, vice-president and general manager, who has offices in the Granite City Lime and Cement Building, stated that the new plant will employ 200 skilled mechanics. A report that the Midland Creosote Company was connected with the Kettle River and Quarry Company of Madison, was emphatically denied by Newton.

The L. J. Smith Construction Co., Commerce Bldg., Kansas City, Mo., have sublet all of their grading on the North Texas and Santa Fe Ry., "Santa Fe System" between Shattuck, Okla., and Hansford, Texas, with the exception of 12 miles. This 12 miles that is not covered runs about 70,000 yards to the mile. There is about 100,000 cubic yards of solid rock and 35,000 cubic yards of loose rock in this piece. The work runs through a splendid cattle and wheat country, well watered by running streams and shallow wells. They expect to push this work and complete same by Nov. 1st, 1917. In addition to the contract for grading 84 miles of main line this firm has also the contract for 12 miles of siding and covers the grading, bridging, track laying, building of round houses, section houses, depots, water tanks, digging of wells, building the stock pens, fencing the right of way, in fact building the railroad complete ready to operate. Scott Mitchell, vice-president of this firm, will have direct charge of the work.

J. E. Collins has moved his outfit on 4 miles of grading on the North Texas and Santa Fe Ry., that he subbed from the L. J. Smith Construction Co.

Ed Lindsay got in on two miles of the North Texas and Santa Fe Ry., from the L. J. Smith Construction Co.

A. L. Cook, of Ottawa, Kansas, has subbed 50 miles of the North Texas and Santa Fe Railway Co., between Shattuck, Okla., and Hansford, Texas, from the L. J. Smith Construction Co.

C. L. Rogers has taken 5 miles of grading from the L. J. Smith Construction Co., on the new North Texas and Santa Fe Ry.

W. P. McCoy has taken 11 miles of grading from the L. J. Smith Construction Co., on the North Texas and Santa Fe Ry.

Z. C. Mitchell, of the L. J. Smith Construction Co., is in charge of their work on the M. K. &. T. R. R. Mitchell's headquarters are Tulsa, Okla., and he expects to finish this work in several weeks.

Contractors, when in want of labor or work for their idle outfits write Koenig Labor Agency, 612 Walnut St., St. Louis, Mo., or 503 Delaware St., Kansas City, Mo.

W. A. Gierke, Drakeville, Iowa, reports his six teams idle at that point.

Jack Hickey, of Hickey Bros., after spending the holidays with his family here returned to Seneca, S. C. Jack reports lots of work on the Southern R. R. and turning in some big estimates at that point.

John Scott & Sons, St. Louis, Mo., have started on their big contract on the Santa Fe Ry., west of Lubbock, Texas.

Robt. McCann, of McCann Bros., died at Grand Tower, Ill., last week. His death was caused by scratching a pimple that turned into erysipelas and blood poison.

Jim Skeen died at Seneca, S. C. At the time of his death, Skeen was with Hickey Bros. Co., on the Southern Ry.

New York

T. C. Desmond & Company announce the incorporation of their business as engineers and contractors for the purpose of undertaking engineering and construction contracts of all descriptions. Associated with Mr. Desmond is Mr. Howard W. Arnold. Their address is 110 West 34th St., New York City.

Otto Momsen sailed from New York on December 30th for Chile where he is going to set up a new 103-C Bucyrus electric shovel for the Chile Exploration Company.

The Goodman Contracting Company, Patrick Goodman, president, has removed its offices to 90 Alexander Ave., near 133rd St.

News from Ohio

BY M. E. SYKES, Columbus

The Alvord-Burdick plan for flood protection on the West Side of Columbus has been ruled out by the Franklin County Common Pleas Court. The Court claims that the plan is financially unfeasible. Under the Alvord-Burdick system it was proposed to expend about $11,000,000. It is not known what will be done to take the place of the original plan.

The Fred R. Jones Company, who have been working on the third track of the Pennsylvania Railroad's Ft. Wayne Division through Alliance and Garfield, have nearly finished. They used a Bucyrus 70-C for over 200,000 yds. of this work and accomplished practically the entire job since July.

Mr. C. R. Cummins, of Cleveland, is completing his work on the Pennsylvania Railroad around Worthington, North of Columbus. He had two jobs up there. He has arranged now with the Pennsylvania Railroad so that he is awarded the work for the Cleveland, Akron & Columbus yards just outside of Columbus. He has 150,000 yards of stuff here and about a ten-mile haul on it. A Bucyrus 70-C will be used on this work.

J. H. Jones, of Fostoria, Ohio, has been awarded a big reservoir job near Lima. He will use his Bucyrus dragline and shovel equipment on this work.

Oregon

Portland and Vicinity

BY L. T. RUSSELL

Porter Bros. have moved their 18-B shovel into their yard at Kenton to be laid up for the winter. This machine has been used during the summer on highway work near Castle Rock, Washington.

C. P. McDowell has left Portland for Bingham Canyon to run a shovel in that copper camp.

The construction outlook in the Northwest is better now than for some time, yet we can easily stand still more improvement. One bad feature of the situation as applies to contractors is that the price of work has not risen in proportion to other things such as labor and supplies. Hence hoping for still better conditions.

The Oregon Irrigation Congress met at the Imperial Hotel, Portland, Oregon, on January 3rd, 4th and 5th with a large attendance. One of the chief considerations before this Congress is to urge upon the public the necessity of having interest on irrigation bonds of projects of merit guaranteed by either the state in which the project is located or else by the Federal Government, in order to make these bonds more attractive to investors. A bill is now being prepared that will place the matter before Congress. If it passes we may look for a decided improvement in the world for such bonds as are approved, and much new work will be started up as fast as the financial and other conditions are met by the promoters.

Panama

It is estimated that on December 1st, the amount of dredging remaining in the original excavation of the canal and harbor work exclusive of Gaillard Cut, is 4,027,898 cubic yards.

On account of the improved condition of the channel in the Cut, dredging on Sundays and holidays was discontinued, beginning with Sunday, December 3. After this, unless conditions

change decidedly for the worse, Sunday work in the Cut will be confined to the necessary blasting at the rock known as "Gibraltar."

Continuous work, Sundays and holidays included, three shifts a day, had been carried on steadily since the first of June, 1915, when trouble with the east and west Culebra slides became imminent. The operation of three shifts on week days will continue.

The channel in the Cut is in better condition now than ever before. The central cut through which the vessels pass, known as the sailing channel, has a minimum depth of 33 feet, and the least width of a channel of 30-foot depth is 180 feet. This is opposite "Gibraltar," at the foot of the east Culebra slide. This rock extends into the channel about 110 feet from the prism line, for a distance of about 200 feet along the axis of the Canal, from station 1792 to 1794. At other parts between the Culebra slides and at Cucaracha slide as well the channel has been dredged to at least 30 feet for the full width of 300 feet between the prism lines.

The dredges *Corozal*, and *Paraiso* are at work in the slide area. They are working close to Gibraltar, removing the rock itself and cutting in behind it to prevent its being pushed forward A number of drills are engaged every day including Sundays, on the work of drilling and blasting the rock for the dredges to remove it. It has been considerably reduced in size and now extends only about 30 feet above the surface of the water in the Cut. The smaller dredges have been withdrawn because only a few can work to advantage in the area to which dredging is now confined, and the large dredges can operate less expensively.

Pennsylvania

Wilkes-Barre & Vicinity

BY EDWARD GEORGE

Kenneth Shupp has two shovels on the Delaware & Hudson Company's stripping at Plymouth, Pa., Wm. Russell is superintendent of the job.

The D. & H. Co. has two shovels in stock piles loading coal, one at Olyphant and the other at Parsons, Pa. The writer is in charge of the Parsons plant.

Timothy Burke has all of his shovels working on different stripping around this vicinity.

Porter Bros. have one shovel working at Carbondale, making a fill for the new yards of the Delaware & Hudson Company. This job is in charge of L. Randall of Portland, Oregon. This Company has also one shovel at work at Altamont, New York, reducing curves and grades. The job is in charge of W. J. Porter a member of the firm. Bill is the proud father of a son since November 15th. He is all smiles since the new arrival.

Big Charlie Rees of the Bucyrus Company called on me a few weeks ago and he is as fine as ever.

The Beaver-Sand Company of Beaver, Pa., advise us that they are in the market for two second-hand gyratory crushers: Austin, Gates and McCully makes preferred.

Rhode Island

E. W. Foley Contracting Corp. of Providence have been awarded a contract for building steam control works for the main dam of the Scituate Reservoir on the Pawtucket River in Scituate, near Kent, R. I., involving about 65,000 cu. yd. of earth excavation, 9,000 cu. yd. of rock excavation, at $133,490.

South Carolina

C. N. Collins is operating a 60-C Bucyrus for the Brooks Callaway Company of Atlanta at Spartanburg. His address is R. R. No. 1, care J. L. Cooksey.

Texas

A. L. Cook, Ottawa, has sublet 50 miles of the North Texas & Santa Fe Ry. Co. work between Shattuck and Hansford, Tex., from the L J. Smith Construction Co.

Virginia

Fred J. Brewer is at present erecting a new Bucyrus class-20 dragline excavator for George Leary Construction Company at Norfolk.

Washington

A bond issue of $5,000,000 has been voted for the construction of the proposed irrigation system near Ellensburg, for which Twohy Brothers, Portland, have agreed to take and carry on the construction work.

West Virginia

A letter from our friend J. H. Bitner from Martinsburg just after our January number went to press, tells us that he enjoyed himself thoroughly during the holidays in Elma, holding hands with his lady friend. He says he had a fine time. His plans for the future are in the air.

Wyoming

The Utah Construction Co., Ogden, Utah, has been awarded contract for about 60 miles of second track work on the Wyoming division, including a stretch of line change and a tunnel approximately 1,800 ft. in length, through the Sherman hill; also grading for second track between Wamsutter and Point of Rocks, a distance of 52 miles, and a line change between Tipton and Bitter Creek, a distance of 16 miles, and second track work between Buford and Hermosa, Wyo., a short distance west of Cheyenne.

North Platte Notes

BY MRS. F. A. MENGEL

Winston Camp.

W. O. Winston, Jr., enjoyed the holidays with his parents in Minneapolis.

Winston Construction Company are now nicely and comfortably settled in their new camp, three miles from Lingle, Wyoming.

"Chef" Lunberg, of Winston Bros., is somewhat of an auto driver now. He came driving in from Cheyenne in a new Saxon-four Christmas day.

The employees of the Winston Camp had their annual Christmas dinner, which was somewhat enjoyed!

Winston's class-24 Bucyrus dragline has been hauled from Ft. Laramie and is being erected about six miles out of Torrington. The new auto truck and new caterpillar tractor did the hauling.

The class-20 Bucyrus has been shut down during the present blizzard but will start up again as soon as the weather permits.

Hilton Camp.

Mr. and Mrs. Harvey Dock gave a dance in their cabin on January 6th. The neighboring camps were the guests.

A new well has been sunk and the Hilton Company are ready to move camp. Their class-20 Bucyrus is just working one shift. Mr. Samuelson is operating.

"Dis heah cost o' livin'," observed Mandy Morgan, "is gittin' somethin' awful! Would yo' believe me, a single ham done cost mah husband six months in jail?"—*Puck.*

PROSPECTIVE · CONSTRUCTION

Alabama

Plans are being made by The Mobile, Volanta & Pensacola, it is said, to build a line between Gabel, Ala., and Elberta, about 23 miles. The headquarters of the company are at Mobile, Ala.

Board of Revenue of Jefferson County will receive bids shortly for constructing highway between Wylam & Warrior River, about fifteen miles.

The Interurban Development Company, Birmingham, Ala., has arrangements made, it is said, for financing the construction of an electric line from Birmingham, northwest to Jasper, about 35 miles. W. W. Shortridge, secretary, Birmingham.

The Gulf Ports Terminal R. R. Co. proposes to extend line from Pensacola to and across Perdido Bay, to Mobile, Ala.

Arkansas

Bids will be received by G. Elder, county clerk, Lake Village, in the spring for construction of about forty miles state highway. Cost about $250,000.

Contract for constructing 39-mile gravel road near Waldron, to cost about $140,000, will be let soon by State Highway Commission, Little Rock, Ark.

It is being planned by the county commissioners at Conway, to construct an eighteen-mile highway at a cost of about $110,371; also an eight-mile highway in Conway-Saltillo district.

California

A bill has been introduced in Congress by Representative Baker, of California, to provide $3,500,000, for the construction of what will be known as the Sierran Highway from Los Angeles north to the Oregon line, across the east base of the great California range. Among other reasons for urging the passage of this bill which is argued, that aside from the various benefits to tourists, such a road would be of great advantage to the neglected mountain counties by affording them easy intercommunication by motor truck and would make possible the development of great timber areas and mining properties, etc. It is also urged that this road would be of tremendous military importance should the vulnerable Pacific Coast fall before an invading army from the Pacific.

It is being planned by Ventura, Los Angeles and Orange counties to construct concrete boulevard about ninety miles long. Cost about $1,000,000.

Canada

Highway improvement will most likely be the first construction work undertaken in the Cornwall, Ontario, district, after the war, and in any event work may be started in 1917. A road-improvement law passed by the county commissioners of Cornwall's three counties, effective in January, 1917, provides for the construction of about 400 miles of county stone roads.

Florida

Bonds for $3,500,000 have been sold by the Board of Commissioners of the Everglades Drainage District for the purpose of proceeding with construction of the system of canals during the coming year.

Foreign

U. S. of Colombia—The government of Colombia has recently passed a law which would put a new lease of life in the project of extending the Pacific Railway Company's lines. The original contract is not particularly successful, owing to the expense and difficulties of construction. The new law authorizes the government to make a new contract with the railroad company for the proposed extension. The government will co-operate.

Peru—Irrigation and river drainage is becoming more and more important in Peru. A law has recently been passed authorizing the completion of irrigation work east of Lima. Authority has also been granted for making surveys for the irrigation of vacant land south of Lima and for the deepening of the river Rimac near this city, the straightening of dikes, etc. The government will assume, however, the expense of these improvements.

Austria—A report from Vienna states that it is urged that the construction of the proposed deep water canal between the Danube and the Rhine, be started at once. It is stated that this will be of great advantage as a chief means of transportation between West Germany and the Balkan States and Turkey.

China—The Siems-Carey Co., of St. Paul, Minn., have been awarded contract for construction of an additional 300 miles of railway for the Chinese government, to run from Chowkiakaw, in Honan Province, through Nanyangfu to Siangyangfu, in Hupeh Province. Surveys are now being made.

Russia—The committee for the construction of new railways in Russia has decided on the construction of a large number of new lines in the Caucasus, Siberia, and in the Lena Region.

Illinois

Plans have been completed for a drainage system requiring about five miles of drainage and three highway bridges. Estimated cost $81,000. Sheppard & Morgan, engineers, Edwardsville, Ill.

It is being contemplated by the city of Des Moines to construct improvements to cost about $2,000,000. This will include eighteen miles new paving, opening, widening, grading and repairing streets, concrete bridges, etc.

Kansas

It is being planned by Colorado, Kansas & Oklahoma Railroad Co., Ben L. Allen, chief engineer, Scott City, Kansas, to construct a line from Scott City to Forgan, Okla., via Cimarron and Meade or via Garden City and Liberal, distance about 133 miles.

Kentucky

The Mowbray-Robinson Company will build a 15-mile railroad, it is said from Krypton, Ky., to undeveloped coal fields at Troublesome Creek. W. G. Denham, engineer, Krypton.

The Illinois Central R. R. is having final surveys made of the new proposed railroad line connecting Dawson Springs with Providence, a distance of 22 miles, touching the towns of Charleston, Beulah and Dalton. A. B. B. Harris is locating engineer, Chicago, Ill.

Louisiana

It is being considered by the Santa Fe System, E. N. Bisbee, chief engineer (Western Lines), Amarillo, Tex., to construct an extension of the DeRidder branch in Louisiana from Oakdale to New Orleans, about 150 miles.

The Miltenberg & Southeastern R. R. has been incorporated with a capital of $100,000 for building line from Miltonberg, La., to a connection with the St. Louis, Iron Mountain & Southern at a point about eight miles south of Alexandria; also to build from Miltonberg to Leesville, about 45 miles. W. D. Brewer is president.

Bids for constructing the following work will be received until March 7th by board of commissioners of Red River, Atchafalaya & Bayou Boeuf Levee District. First, Alexandria to Chatlin's Lake, excavating drainage channel, about 550,000 cubic yards, $1,450 deposit required. Second, Chatlin's Lake to Three Prong Lake, excavating drainage channel, about 600,000 cubic yards, $1,600 deposit required. Third, Three Prong Lake to Big Bayou des Galizes, excavating drainage channel, about 750,000 cubic yards, $1,950 deposit required, and for Turner's Bayou to Yellow Bayou, excavating drainage channel, 75,000 cubic yards, $275 deposit required.

Michigan

The Cleveland, Cincinnati, Chicago & St. Louis Ry., are planning an extension of line from Benton Harbor to St. Joseph;

also build depot and freight switching yard. C. A. Paquette is chief engineer, Cincinnati, O.

Minnesota

D. P. Carney, county auditor, Benson, will furnish further information regarding County Ditch No. 17 to be constructed. This will involve 200,000 cubic yards of dry land work, etc., and will cost about $73,000. He will also furnish further information regarding surveys now being made for construction of Judicial Ditch No. 8, cost about $150,000; also Ditch No. 11, cost about $500,000.

Mississippi

Contract has been awarded to Tupelo Dredging Co., Tupelo, Miss., at 7.45c per cubic yard for constructing about twenty-two miles open ditch, near Senatobia. This will require about 900,000 cubic yards of earth work.

Missouri

The P. J. Hannan Co., Boatmans Bank Bldg., St. Louis, Mo., were awarded a contract for five-mile cutoff for the Wabash R. R. Co., near Dewitt, over half of it being heavy steam shovel work.

The following items are included in the Missouri River Appropriation, totaling $1,110,000, which has been agreed upon by the house committee: Mouth to Kansas City, $1,000,000; Kansas City to Sioux City, $35,000; Sioux City to Fort Benton, $50,000; at St. Joseph, $25,000.

It is being considered by Gaston Railway Syndicate, Scarritt Building, Kansas City, Mo., Samuel J. McWilliams, secretary, to construct line from Kansas City, Mo., via Butler and Rockville to Springfield, Mo., distance about 150 miles.

Montana

Surveys are being made by the Great Northern Railway Co., A. H. Hogeland, chief engineer, St. Paul, Minn., for a line from Great Falls to connect with the Havre line at Sarter or Floweree, distance about sixty miles.

Nebraska

The Union Pacific has let contracts for the completion of double track between Council Bluffs, Iowa, and Granger, Wyo., as follows: From Archer, Wyo., to Pine Bluffs, 33.35 miles to the Phelan-Shirley Company, Omaha, Nebr., for the two sections from Point of Rocks, Wyo., to Wamsutter, 51.89 miles and from Hermosa to Buford, 11.11 miles to the Utah Construction Company, Salt Lake City, Utah. The latter work includes the construction of a tunnel about 1,800 ft. long to be constructed adjacent to the present single track tunnel at a cost of $500,000. The total cost of the double tracking work including the tunnel will be about $4,120,000.

The Omaha, Lincoln & Beatrice Ry. Co. will probably let contract in the spring for constructing a road from Lincoln to Omaha, Havelock, Greenwood, Ashland, Papillion, South Omaha and Omaha, about 50 miles. J. M. Bramlette, Lincoln, Neb.

Nevada

H. C. Nutt, general manager of the Salt Lake Route, has announced that the Salt Lake will expend at least $5,500,000 in new construction and improvements in 1917, including laying 200 miles of new 90-lb. rails, approximate cost, $1,500,000; additional ballast, $50,000; improving water supply at Las Vegas, Nev., $25,000; installing automatic block signals, $390,000; bridges, $120,000; miscellaneous betterments, $160,000; 750 self-dumping steel gondola cars, 6 cabooses and 6 giant locomotives of latest type, $1,800,000; and a new branch line 24 miles long from Pico to Santa Ana, Cal., costing about $1,400,000. Bridges include a steel span in Clover Valley wash, Nevada, and a large concrete arch over Sevier River, south of Lynndyl, Utah. Work began Jan. 2, at various points on the Salt Lake Route, under Arthur Maguire, chief engineer.

New York

The Erie R. R. Co. proposes to spend about $1,000,000 in Hornell in improvements upon its property, including building of new coal pockets and sand house and erection of new interlocking switches in rebuilding of entire yard, replacing rails, etc.

North Carolina

Bids for constructing a drainage system to reclaim 1,150 acres will be received soon by Snow Creek Drainage District, W. D. Alexander, surveyor, Statesville, N. C. This will be eleven miles long and involve 353,000 cubic yards excavation. Cost about $30,000.

North Dakota

It is being planned by The Chicago, Milwaukee & St. Paul, H. B. Earling, vice-president, Chicago, Ill., to extend its line from Amidon to New England. Cost about $750,000.

Oklahoma

The L. J. Smith Construction Co., Commerce Bldg., Kansas City, Mo., will sublet about 12 miles of grading on the North Texas & Santa Fe Ry., between Shattuck, Okla., and Hansford, Tex., which runs about 70,000 yd. to the mile, about 100.000 cu. yd. of solid rock and 35,000 cu. yd. of loose rock.

Bids for grading, bridge work, track laying, fencing and building for extension of line from here southwesterly to point near Hansford county, Tex., are being asked by Santa Fe Railroad, F. M. Bisbee, chief engineer (Western Lines), Amarillo, Tex. Will involve eighty-two miles main line track and twelve miles sidings; also for Brownfield extension of South Plains and Santa Fe from Lubbock, Tex., to point about twenty-four miles southwest of Brownfield, Tex., sixty-four miles main line, eight miles siding.

Oregon

It is rumored that the Smith-Powers Logging Co. proposes to build a railroad extension between Marshfield and Myrtle Point, 30 miles, including much pile trestle and two bridges, to cost about $1,000,000.

South Carolina

The Charlotte, Monroe & Columbia R. R. is contemplating building an extension from Jefferson, S. C., northwest to Monroe, N. C., about 30 miles.

South Dakota

The Belle Fourche & Northwestern Ry. Co. has completed surveys for both the preliminary and located line from Belle Fourche to Miles City, a distance of 170 miles, and estimates are now being prepared for same. J. H. Thomas is chief engineer and superintendent of construction, Belle Fourche, S. D.

Tennessee

The Nashville, Chattanooga & St. Louis plans to build 13 miles of new railroad into the coal-producing section of Grundy county. Construction work will be started at once. The new line will be an extension of the Tracy City branch and will extend form the present terminus at Coalmont, Tenn., northeasterly to Mill Creek, near Tatesville. The preliminary survey for this extension was made over a year ago.

Texas

The Eagle Pass & Gulf R. R. has projected a line between Eagle Pass, Tex., and Arkansas Pass, by way of Dimmit, La Salle, McMullen, Oakville, Beeville and Refugio, about 200 miles. The promoters will assume the general contracts themselves, of which the first 100 miles will be let in the near future, but will sublet to smaller contractors in the main. A permit will be asked from the State of Texas for the acquisition of the Asherton & Gulf, a small line running between Asherton and Artesian Wells, a distance of about 28 miles. It is estimated that the maximum grade will average 0.7 per cent and the maximum curve four deg. R. H. Phillips, chief engineer, and C. E. Hanon, chairman of the board, St. Louis, Mo.

The contract for constructing sixty-five miles extension of Santa Fe railroad, southwest of Lubbock, has been awarded to John Scott & Sons, Pierce Building, St. Louis, Mo.

Virginia

The Louisville & Nashville has made surveys for a 10-mile extension from Norton to the headwaters of Guest River in Black Mountain section.

West Virginia

The contract for constructing seventeen miles Fayetteville-McGrath road will be let in February by J. K. McGrath, road engineer, Fayetteville.

Wisconsin

Plans were matured at the annual meeting of the Milwaukee Western Railway Company to finance the company and to proceed with the building of the road during the summer of 1917. A holding company will be formed under the laws of Delaware to supervise and control the road and the operating company will handle the proposition in Wisconsin. Active work is now underway for obtaining the remainder of the right-of-way between Milwaukee and Fox Lake. The road will cover 74 miles to Fox Lake at first and later will be extended to Markesan and Green Lake. The road will be an electric line. Seven directors were elected at follows: Alvin P. Kletzsch, W. O. Vilter, Milwaukee; Gustav Meissner, Oconomowoc; John Steel, Alderley, and A. F. Ryder, Juneau, for three years; and H. C. Kelling, Milwaukee, and Julius Bach, Chicago, for two years.

Manufacturing interests in Milwaukee are reported to be formulating a plan in order to interest two additional railroads in running their tracks into Milwaukee. It is said that the Illinois Central has been contemplating such a move for some time, but has never been encouraged by any co-operation on the part of business men in providing for terminal facilities. Such co-operation now seems to be on hand and there also appears to be a reasonable hope that terminal facilities are now available.

REVIEW OF BOOKS and CATALOGS

We shall be glad to review, in this column, such books and catalogs as are sent to us. Books reviewed in these columns will be supplied by The Excavating Engineer Publishing Company at the price named.

THE HISTORY AND DEVELOPMENT OF GOLD DREDGING IN MONTANA:—Bureau of Mines, Bulletin 121, by Hennen Jennings, 64 pages and paper cover. 6 x 9, with a chapter on placer mining methods and operating costs, by Chas. Janin. A well illustrated thorough treatise on the subject. Price 8 .30. Order should be sent to Superintendent of Documents, Government Printing Office, Washington, D. C.

MANGANESE STEEL SAND AND GRAVEL PUMPS AND WEARING PARTS FOR PUMP DREDGES:—Bulletin No. 72, 6 by 9, 16 pages and cover. Illustrated. A description of some manganese centrifugal pumps and wearing parts for hydraulic dredges.

American Manganese Steel Co.,
McCormick Building,
Chicago, Ill.

CONDENSED REPORT OF THE AMERICAN UNIFORM BOILER CODE CONGRESS:—88 pages and cover, 8 by 10½. As the title indicates, this is a condensed report of a meeting of the above congress held under the auspices of the Industrial Commission of Ohio in Washington, D. C., on December 4th and 5th, 1916. Issued by the American Uniform Boiler Law Society, Erie, Pa.

TISCO MANGANESE STEEL CHAINS, SPROCKETS AND CONVEYOR PARTS:—Bulletin 113-D, May 1916, 6 by 9, 24 pages and cover, specifications and prices on various types of chain, sprockets and conveyor parts.

Taylor-Wharton Iron & Steel Co.,
High Bridge, N. J.

LOADING AND UNLOADING DEVICES FOR MOTOR TRUCKS:—Are described and illustrated in the Contractors Atlas for December. Published by—

The Atlas Portland Cement Co.,
30 Broad Street,
New York, N.Y.

CUTTING HAULAGE COSTS IN HALF WITH A PLYMOUTH LOCOMOTIVE:—Catalogue number 3, 9 by 6, 96 pages and cover. A well prepared originally arranged catalogue illustrating and describing the Plymouth gasoline locomotive. This not only gives in detail the construction of this locomotive and its good points, but describes and illustrates in a very independent manner the actual performance of this machine.

The J. D. Fate Company,
Plymouth, Ohio

SULLIVAN ROTATOR HAMMER DRILLS:—Bulletin No 70-A, second edition January 1917, 6 by 9, 24 pages; illustrated. Describing the Sullivan Rotator Standard Hammer Drill "DP-33" automatic steel rotation suitable for the general run of rock drilling surface. A "DR-33", the Auger Rotator Drill intended for drilling in soft ore, coal, shale and other formations too soft or too broken to be handled successfully by the standard drill. The catalogue also describes mountings and equipments employed with them.

Sullivan Machinery Co., Chicago, Ill.

ECONOMIC SURVEYS OF COUNTY HIGHWAY IMPROVEMENT:—U. S. Department of Agriculture, Bulletin No. 393, published at Washington, D. C. October 23rd, 1916. 6 by 9. Illustrated. A complication and analysis of data in eight selected counties showing the comparative financial produce and economical benefits resulting from highway improvement during a period of years, by J. E. Pennybacker, chief of road economics and M. O. Eldridge, assistant in road economics.

Supt. of Documents, Gov't Printing Office, Washington, D. C.

CLAM SHELL, ORANGE PEEL AND SCRAPER BUCKET: Catalogue, 6 x 9, 32 pages and cover. Illustrated. Illustrating and describing various types of Kiesler buckets adapted to every variety of dredging and excavating as well as for handling ore, coal, coke, sand, crushed stone and other heavy materials. These buckets are not only illustrated and described in detail, but photographs are presented showing them in operation under various conditions.

Joseph L. Kiesler,
Sangamon and Pratt Streets,
Chicago, Ill.

THE CONCRETE ROAD:—Pamphlet 6 by 9, 16 pages. A paper prepared by Edward N. Hines, Chairman of the Board of County Road Commissioners, Wayne County, Michigan and read before the meeting of the Portland Cement Association in Detroit, September 13th, 1916. The paper is prepared under the following main headings.

Who can Afford to Build Concrete Roads?
What Effect Has a Concrete Road on Land Values?
How do the people of Wayne County Regard Concrete Roads?
Is a Concrete Road Dusty?
How Wide Should a Concrete Road Be?
What About the Cracks that Occur in Concrete Roads?
How Long Should Traffic be Kept Off a Newly-Built Concrete Road?
Is it Advisable to Reinforce a Concrete Road?
Are Concrete Roads Hard on Horses' Feet?
What About the Shoulders on a Concrete Road?
What is the Cost of Maintaining a Mile of Concrete Road?
What Does it Cost to Build a Mile of Concrete Road?
What of the Future?

Portland Cement Association,
111 W. Washington St.,
Chicago, Ill.

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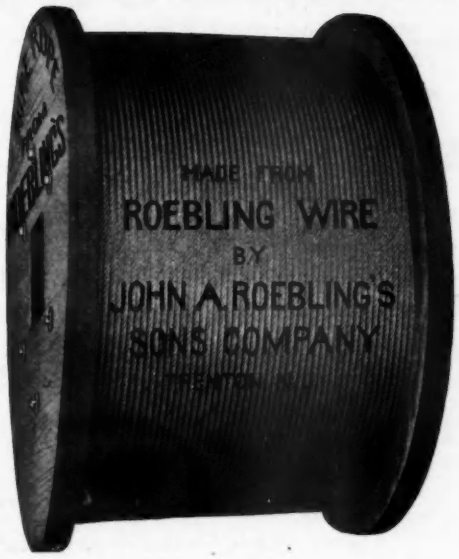

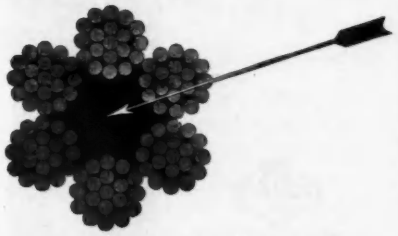

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NEW ORLEANS . 1018 Maison Blanche Bldg., Canal and Dauphine Sts.

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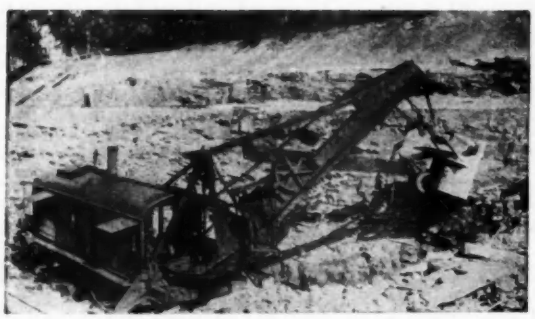

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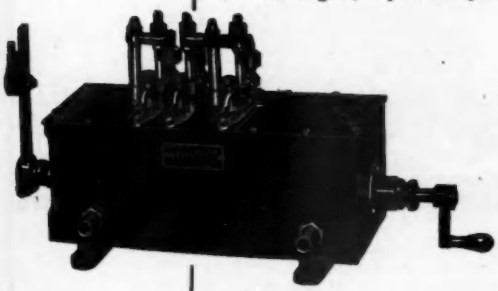

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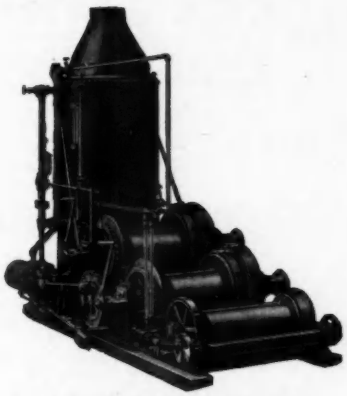

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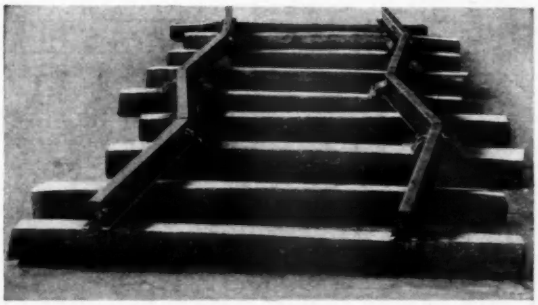

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Changes of grade easily handled

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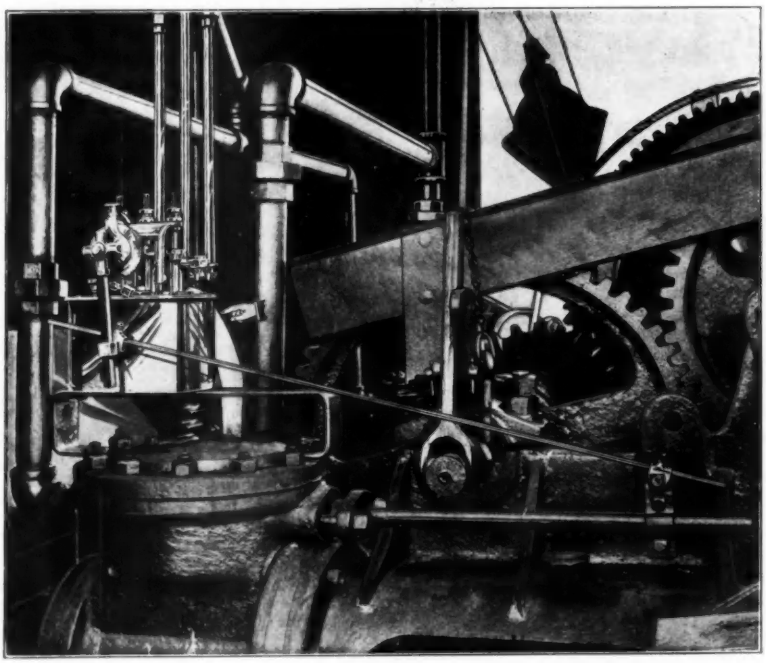

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Vol. XIII No. 6 MARCH 1917

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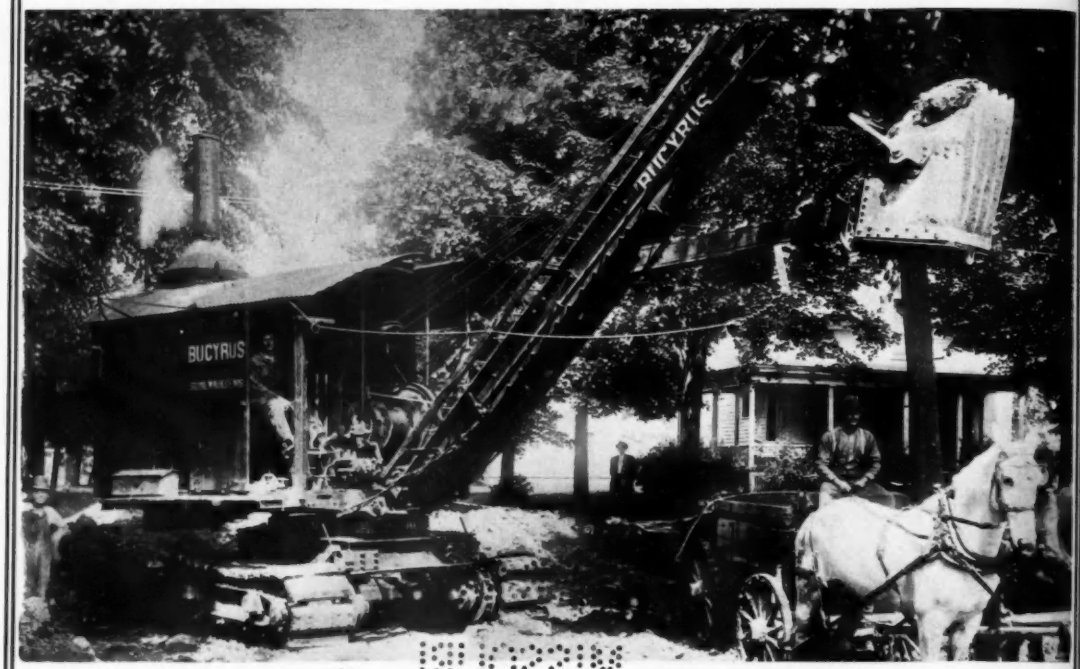

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